CHAPTER V

TRANSPORTATION ELEMENTS

This chapter of the Long Range Transportation Plan contains three important elements of the transportation system. They are alternative transportation, the transit system, and freight transportation. Each element is examined in detail, setting forth issues to address and appropriate strategies for resolving those issues.

A. Alternative Transportation

Alternative transportation modes included in this plan are bicycling, walking and rideshare programs. This section is divided into two segments- the first discusses improvements in Federal funding and planning for bicycle and pedestrian projects and the second describes the MPO's rideshare program and its increasing importance to the region's transportation system. The rideshare program is a transportation control measure (TCM) stated in the State Implementation Plan (SIP). Additionally, a brief summary of the existing and planned bicycle and pedestrian projects for the MPO region by jurisdiction is also provided.

1. Federal Support for Bicycle and Pedestrian Projects

Bicycling and walking have often been referred to as the "forgotten modes" of transportation; this was especially true in the early 1990's when minimal support for bicycle and pedestrian projects was available from the Federal government. According to the US Census Bureau, trips made by bicycling and walking dropped from a combined 6.7 to 4.4 percent between 1980 and 1990. In an effort to reverse this trend, Congress directed the Secretary of Transportation to produce a study that identified ways to safely increase the use of bicycling and walking as modes of transportation. In 1994, The National Bicycling and Walking Study Final Report, *Transportation Choices for a Changing America* was released. The report developed strategies to increase transportation choices thereby creating a more balanced, multi-modal transportation system. The report also established two major national goals:

- Double the percentage of all transportation trips made by bicycling and walking from 7.9 to 15.8 percent.
- Reduce by 10 percent the number of injuries and fatalities sustained by bicyclists and pedestrians in accidents with motor vehicles.

Federal government support for increasing bicycling and walking trips has been apparent in both ISTEA and TEA-21 legislation. According to FHWA, the Federal Aid Highway Program increased funding levels for bicycle and projects from $22.9 M in 1992 to $422.7 M in 2003 (http://www.fhwa.dot.gov/environment/bikeped/bipedfund.htm). Also, TEA-21 amended eligibility requirements for certain Federal transportation funds to

allow bicycle and pedestrian projects to compete and potentially acquire dollars from sources once restricted in their use. Those funding sources include:

- National Highway System
- Congestion Mitigation Air Quality
- Surface Transportation Projects
- Federal Lands
- Scenic Byways
- Recreational Trail

Additionally, program features of TEA-21 included providing additional information and guidance on a wide range of planning, policy, and safety issues affecting bicycling and walking, such as:

- Allocating due consideration to bicyclists and pedestrians in State and MPO long-range transportation plans.
- Where appropriate, giving consideration to bicycle and pedestrian projects in conjunction with all new construction and reconstruction of transportation facilities, except where bicycle and pedestrian use is not permitted.
- Providing due consideration for safety and contiguous routes for bicyclists and pedestrians in transportation plans.
- Addressing bicycle safety issues in railway-highway crossing hazard elimination projects.
- Requiring that the Secretary of Transportation not approve any project or take any regulatory action that will sever an existing major non-motorized route or adversely affect the safety of non-motorized traffic and light motorcycles unless a reasonable alternate route exists or is established.
- Authorizing FHWA to develop a national bicycle safety education curriculum.

2. Bicycle and Pedestrian Planning and Funding

According to the FHWA, despite increases in Federal funding and guidance for bicycle and pedestrian projects, national spending on these transportation modes remains about one percent of total transportation spending for the country. In the Memphis MPO area, transportation planning and funding has focused more on transit, roadways, and the accommodation of the motor vehicle. Accommodating the pedestrian or bicyclist may have been recognized, but was not specifically addressed in major planning documents.

In an effort to promote more pedestrian and bicycle facilities, this plan recognizes the importance of these modes as viable, alternative forms of transportation. As such, the MPO, through this plan and its TIP, encourages the development of facilities that support bicycle and pedestrian transportation modes. The MPO's *Transportation Improvement Plan Fiscal Years 2004-2006*, includes several bicycle and pedestrian projects awarded funding by the State of Tennessee. These projects are listed below:

3. Bike Routes

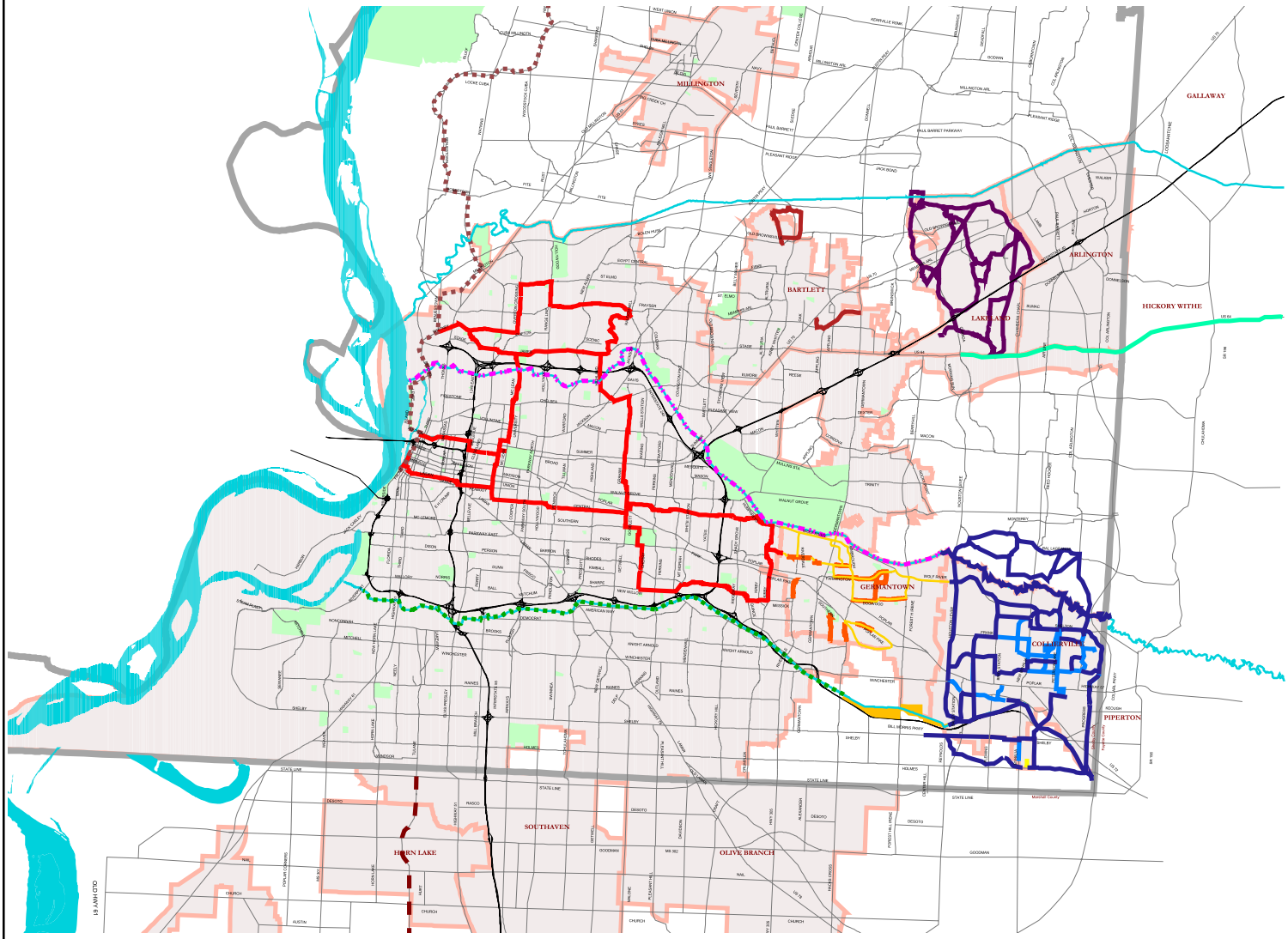
Residents and government officials throughout the metropolitan area increasingly recognize the need for adequate bicycle facilities in the planning area. While several ideal places for bicycle routes exist, adequate facilities for such activities are limited or are located in areas that do not provide a realistic alternative to vehicle trips. The sections below highlight the planning activities several municipalities in the MPO study area have begun to undertake in developing and enhancing bicycle and pedestrian facilities. **Figure 9, Existing and Proposed Bicycle and Pedestrian Facilities,** highlights existing and proposed bicycle and pedestrian facilities in the MPO study area.

City of Memphis Bike Network

The City of Memphis Bicycling Network Phase I is scheduled for the Spring, 2004. The first elements of the project will include the following:

- A 40-mile, five loop, shared roadway that extends west from Downtown Memphis to Kirby Parkway into the east.
- The shared roadway bike route will contain bike signs every half-mile to alert motorists of the route.
- Multiple cycling support centers for cyclists to rest, use the restroom, park, and secure their bikes and obtain bike route information.
- Several emergency facilities, located at fire stations, where cyclists can receive first aid.

Figure 9
Existing and Proposed Bicycle & Pedestrian Facilities



- Continual inspection and repair, if necessary, of pavement along designated routes.
- A web page for advertising the new bike routes and facilities (This web page is currently hosted on the City of Memphis' website www.cityofmemphis.org.
- An educational campaign for motorists, bicyclists, and pedestrians.

Several City of Memphis divisions are involved in the implementation process including Public Works, Engineering, and the Memphis Police Department. A transportation enhancement grant and local match, with a total of $171,541, fund the project. Expenditures associated with the project were developed from the costs of bicycle signs, bicycle racks, website design, and educational materials.

Bartlett Bike Routes

The City of Bartlett is currently seeking funding to install two bikeways-one parallel to the Fletcher Creek greenbelt area, the other near the city's wastewater treatment plant. When designated, these routes will connect local parks to residential areas thereby allowing Bartlett residents an alternative mode of transportation from home to the park.

Germantown Bike Routes

In August 2003, the City of Germantown began the task of re-evaluating their bicycle facilities. Specifically, Germantown's Bicycle Task Force is in the process of:

- Reviewing current and future bike lanes, bike routes, bicycle racks, safety programs and signage throughout the city.
- Determining recommendations for connecting to the City of Memphis' bike routes- particularly at Wolf River Blvd., Neshoba Road, and Messick Road.
- Studying future connections to the Town of Collierville's greenbelt system.

Lakeland Bike, Pedestrian, and Equestrian Routes

Presently, Lakeland has plans to provide a greenbelt along all of the streams that flow through its boundaries. This will accommodate the connection of bike paths from Canada Road to Seed Tick Road and farther east to Chambers Chapel. Bike paths are also being planned to extend northward along Scott's Creek to the Loosahatchie River, south of Interstate 40. Lakeland is working to provide inter-connected bike paths along Cobb Road, Monroe Road, and Canada Road tying back to the original Canada Road bike route. Concurrently, Lakeland is working with developers to have paths constructed as development occurs.

Town of Collierville

Currently, about six miles of greenbelt trails and more than 13 miles of sidewalks exist in the Collierville community. Although these trails and sidewalk networks are well established, Collierville has plans to address gaps in their greenbelt and sidewalk system. Furthermore, with its *Town of Collierville Greenbelt Master Plan Update*, the community is also planning to establish connections to Germantown's greenbelt system and the Nonconnah Creek Greenbelt.

Shelby County

Shelby County currently has two major greenbelt projects in the planning phase-Wolf River Greenbelt and Nonconnah Creek Greenbelt. Both of these greenbelts will provide east-west access for pedestrians and bicyclists. They are described as follows:

- **Wolf River Greenbelt:** The Wolf River Greenbelt is planned to extend from the north end of Mississippi Greenbelt Park on Mud Island on the west to Houston Levee Road on the east. The greenbelt will be about 22 miles in length and will provide a network of multi-use paved trails, including bicycle and pedestrian links through neighborhoods, parks, commercial, and entertainment centers. These links will be located at various bridge crossings, neighborhood streets, and parks. The implementation phase of this project is projected to be in eight phases over the next 15 years, with a substantial portion of the work being done by the U.S. Army Corps of Engineers.

- **Nonconnah Creek Greenbelt:** This greenbelt will be 18 miles in length and extend from Riverport Road on the west to Germantown Road on the east. Like the Wolf River Greenbelt, this greenbelt will provide links to various activity centers and residential areas. This project is also projected in phases over the next 15 years and is part of the Corps of Engineers Nonconnah Flood Control Project.

DeSoto County

The City of Horn Lake, Mississippi has plans in place to develop the Tulane Truce Greenway- a project that will connect several existing parks and nearby residential and commercial areas. The proposed greenway will provide both educational and recreational opportunities for area residents and students. Additionally, DeSoto County is proposing that Tulane Road, from Stateline Road to Arkabutla Lake, be designated a bike route.

State Bike Routes

At this time, the only designated State of Tennessee bike route in the Memphis MPO area is an east-west route on Highway 64. However, according to the state's bicycle and pedestrian coordinator, TDOT is planning many other state routes for the Memphis MPO area. Moreover, TDOT's policy is to accept cyclists as legitimate users of the road, thus making all roads bikeways, and not denying access to a transportation facility unless prohibited by law (e.g. interstates).

4. Future MPO Bicycle and Pedestrian Projects

As demonstrated in the project descriptions above, efforts to increase bicycle and pedestrian facilities in the MPO area are underway. However, most of these facilities are more for recreational purposes and as such, do not offer citizens interested in alternative transportation sufficient facilities for commuting. In an effort to address this gap, the MPO has begun the process of developing a comprehensive bicycle and pedestrian plan. This plan is scheduled for review and adoption no later than December 31, 2004. The primary goal of the plan will be to establish policies and design standards that incorporate bicycle and pedestrian facilities as functional and sustainable elements of the MPO region's transportation system. The comprehensive bicycle and pedestrian plan will be incorporated and amended into the 2026 LRTP.

5. Memphis Area Rideshare and Tennessee Vans

In 1979, the Memphis area initiated a carpool-matching program and has subsequently expanded the program-Memphis Area Rideshare, into a comprehensive urban area ridesharing program that provides a full range of carpool/vanpool/transit/paratransit brokerage, and Transportation Demand Management (TDM) services to area residents, businesses, and institutions. Rideshare programs have become increasingly important as local authorities recognize that mass transit alone is unable to serve many parts of the urban area, particularly the low-density suburban areas. There are also an increasing number of inter-suburban and reverse commuting work trips that cannot be efficiently served by transit. As a result, the approximately 15 to 17 percent of Memphis households which do not have access to a vehicle lack mobility for basic needs such as work, education and job training.

In addition to matching potential rideshare patrons, the program includes developing and promoting worksite ridesharing opportunities, increasing carpool/vanpool transit utilization, providing parking demand management consulting, and developing programs to provide employees with transportation assistance during company expansions or relocations. Recently, the program has begun to offer public and private non-profit agencies and institutions as well as for-profit groups the opportunity to purchase new or used 8, 12, or 15 passenger vans under a pay-as-you-go financing. Currently, there are 136 vans assigned to 92 organizations for various para-transit and vanpooling programs. Based on a study conducted by Tennessee Vans and Memphis Area Rideshare in 2003,

these vans are being used to provide transportation services to about 12,000 residents in the MPO region.

In 2003, Memphis Area Rideshare and Tennessee Vans conducted a needs assessment for future vehicles. It was determined that clients have an interest in an alternative vehicle. Beginning in 2004, Memphis Area Rideshare will have 12-passenger vans available in 2004 in response to safety issues and to promote increased usage.

Table 8 provides the historical membership enrollment for Rideshare and also the totals for the Tennessee Vans Lease Program. The data indicates consistent growth in these programs. Efforts to increase membership in both of these programs are a goal of this plan in an effort to provide alternative transportation and as well as provide a mechanism to reduce congestion in the corridors identified in the Congestion Management section of this plan.

Table 8
Rideshare and Van Lease Historical Data

Year	Rideshare Membership	Van Purchases/Leases
1998	11,536	52
1999	13,020	67
2000	11,991	82
2001	14,537	98
2002	16,187	115
2003	17,852	136

Currently, the program has 17,852 members on file, of which over 2,000 are involved in ridesharing programs for work trip commutes. The Memphis Area Rideshare Program is funded at approximately $1.25 million per year and provides the following:

- On-line rideshare information system using advanced computer, Internet and telecommunications technologies.
- Vanpools for reverse commute and non-traditional route configurations.
- Emergency ride services for workers using rideshare and transit.
- The Entrepreneurial Services Program (ESP) for existing and potential transportation providers to meet the underserved travel demand market.

7. Conclusion

In summary, the MPO recognizes the important benefits associated with alternative forms of transportation. As such, the MPO is committed to developing and promoting a regional bicycle and pedestrian plan for the region. In addition, through this plan the MPO will continue to support the Memphis Area Rideshare Program and the Tennessee Van Lease Program in an effort to reduce single occupancy vehicle trips and as a supplement to mass transit.

LRTP 2026 Projects/Strategies

The most significant projects in the LRTP 2026 that support alternative transportation include:

1. **Bicycle and Pedestrian Projects**

- Memphis Bicycle Network Phase I
- Downtown Bike Racks
- Shelby County- Shelby Farms Trail System
- Nonconnah Creek Greenbelt
- Nonconnah Creek Greenbelt Phase I
- Shelby Farms Trails and Lucius C. Birch Jr. Greenway
- Arlington Depot Square
- Riverfront Bike/Pedestrian Phase IIA
- Riverfront Bike/Pedestrian Phase II-C&D
- University of Memphis- Central Ave.
- Project #977 Cobblestone Walkway and Restoration
- Project #1743 Cobblestone Ramp and Restoration
- Old Germantown Streetscape

2. **Memphis Area Rideshare**

- Commuter Club
- Ride Matching
- Employer Services
- Tennessee Van Program

SUPPORT OF LRTP 2026 GOALS

While supporting all of the goals of the LRTP 2026, the alternative transportation element of the transportation system specifically addresses the following goals and objectives:

• Increase accessibility and mobility for people using the MPO's regional transportation network

- Market and promote the Memphis Area Rideshare and Van Lease Program in employment centers and in identified congestion corridors

• Encourage conservation of energy resources in addition to minimizing adverse impacts transportation has on social, economic and environmental attributes of the community

- Protect and enhance environmentally sensitive areas

- Promote the selection and use of energy efficient transportation devices

• Encourage and provide adequate facilities for non-motorized transportation modes

- Work with jurisdictions and bike and pedestrian clubs in the Memphis MPO region to develop a regional bicycle and pedestrian plan

- Work with the MSCAA and IPM to obtain funding for projects designated in their master plans

- Work with MATA to increase options for bicyclists who access mass transit

- Develop project criteria that encourages development and enhancement of bicycle and pedestrian facilities

• Increase the safety and security of the transportation system for motorized and non-motorized users

- Develop right-of-way cross sections that permit the separation of sidewalks and utilities safely from driving lanes

- Provide (where feasible) adequately sized bike lanes and signage to promote and protect bicyclists

- Encourage policies, plans and transportation projects that eliminate unsafe designs and conditions and provide increased safety for users

• Continue to develop a multi-modal transportation network that utilizes strategies for addressing congestion management and air quality issues in the MPO region

- Continue to implement and promote strategies and policies such as access control, HOV facilities, travel demand management, mass transit and alternative transportation to improve congestion corridors

B. Transit

The components of long-range transit are designed to provide an integrated network serving diverse transit markets in segments of the MPO area. Specifically, provisions have been provided for rail in major travel corridors, fixed route bus service in areas of moderate density, a system of terminals to provide efficient transfers among modes and routes, and complementary para-transit service for individuals with disabilities who cannot utilize the fixed route system. The transit element for this plan is illustrated in **Figure 10, Regional Transit Plan.** Also, the funding mechanisms related to transit are fully discussed in **Chapter 7- Financial Analysis**.

1. Service

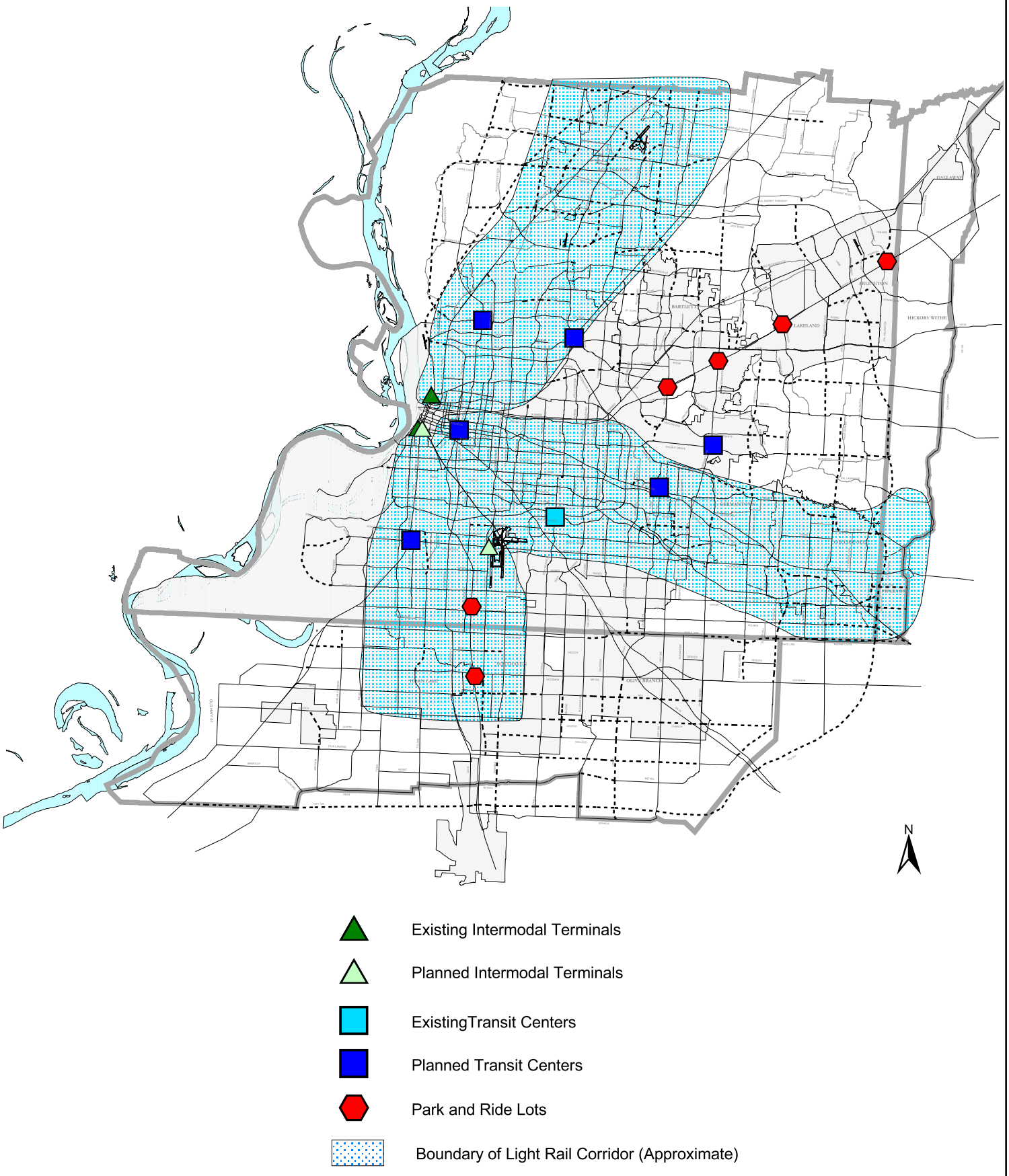
MATA offers fixed route bus service and demand response para-transit service in the city of Memphis, selected suburban municipalities, and portions of unincorporated Shelby County. Cumulatively, transit ridership has varied only slightly over the last several years in these areas. According to data collected from MATA, bus and fixed rail systems have maintained an annual base ridership of approximately 12 million trips including demand response trips.

MATA also operates the rail trolley system, a form of light rail transit (LRT), within the Memphis downtown area. In total, MATA provides over 600,000 hours of transit service and carries about 12 million passengers per year (MATA, 2003).

2. Long Range Transit Plan

The *Regional Transit Plan*, adopted in 1997, set forth a major revamping of the transit system. The plan outlines a reconfigured transit system based on orienting the bus service to a series of transfer stations in suburban locations, expanding the downtown trolley, developing suburban park and ride facilities and building a new light rail transit system. The *Regional Transit Plan* is one of the basic building blocks of the MPO's LRTP, in particular the light rail system and its potential impact on future development patterns. In fact, improved transit service and increased transit use is referenced in several of the MPO goals and objectives **(refer to Chapter 3)**. MATA supports the MPO's goals and objectives with a commitment to continuous improvement in transit services to meet the needs of existing riders and attract new riders. MATA has a three-pronged approach to fulfilling its commitment: (1) major capital projects, such as rail and inter-modal passenger terminals, (2) other capital projects such as vehicle purchases, upgrading of existing facilities and equipment, and small-scale new infrastructure, and (3) service improvements to meet the needs of the community. Each of these approaches is discussed in turn in the sections that follow.

Figure 10
Regional Transit Plan



3. Major Capital Projects

Major capital projects are funded primarily or exclusively with FTA Section 5309 discretionary federal funds with local matching funds. Section 5309 Bus and Bus Facilities projects are funded at an 80% federal level. Section 5309 New Starts (rail) are typically funded at a lower federal share, around 50%. Some smaller projects may be funded with FTA Section 5307 formula funds, at an 80% federal share.

Several major transit capital improvements have been completed in the past several years to provide the base from which a regional transit concept of terminals and rail fixed guideways can be created. These include:

- Main Street Rail Trolley (1993)
- Riverfront Loop Rail Extension (1997)
- North End Terminal (1998)
- Central Station (1999)
- American Way Transit Center (2001)
- Medical Center Rail Extension (2004)

Fixed Guideways

The fixed guideway component of this plan includes expansion of the downtown rail system (Main Street, Riverfront, and Medical Center lines) to provide high capacity transit service in three regional corridors:

- Southeast Corridor-- serving Midtown, Southeast Memphis, East Memphis, Germantown and Collierville, including the initial segment of the corridor -- the Downtown Airport Line
- South Corridor-- serving South Memphis, Whitehaven, Southaven, and Horn Lake
- North Corridor -- serving North Memphis, Frayser, and Millington

Fixed guideway is a generic term that describes all infrastructure that is used to "guide" transit vehicles, such as rails and exclusive busways. Light rail has been selected as the preferred type of fixed guideway for the Downtown-Airport segment of the Southeast Corridor. Although the technology and alignment have not been selected for other corridors, MATA continually monitors the availability of freight railroad right-of-ways for opportunities to secure properties for future use for a fixed guideway investment or for other public purposes.

The fixed guideway component has been advancing since 2000. The first step was a Corridor Selection Study to determine the initial corridor, of the three in the plan, to be studied in detail. During the Corridor Selection Study, the community involvement process identified the key needs of work force transportation and redevelopment of underutilized areas (transit oriented development). The three candidate corridors were evaluated using criteria such as access and mobility, costs, opportunities for transit-oriented development, use of shared rights-of-way, traffic congestion, and impacts on sensitive areas.

In deliberating the results of that evaluation, it was recognized that the first phase of regional high capacity transit must be effective in attracting riders and contributing to the economic vitality of the region. The deliberations also recognized that the Memphis International Airport and its surrounding area is the largest generator of jobs in the region and thus should be the primary destination served by the first leg of the regional system. At the conclusion of the Corridor Selection Study, the Southeast Corridor was selected as the top priority corridor for detailed study and, further, the Downtown - Airport segment of the Southeast Corridor was chosen as the initial segment to study. At that time, the Downtown-Airport corridor became a "subcorridor" of the main Southeast Corridor. Light Rail was then selected, after the opportunity for public comment, as the technology of choice for the line. A decision on the Locally Preferred Alternative for the Downtown-Airport segment of the Southeast corridor is expected in 2004. The remainder of the Southeast Corridor as well as the South and North Corridors will be studied in detail at a later date.

The Downtown - Airport Corridor is located entirely within the City of Memphis. The corridor is bounded on the west by the Mississippi River, Crump Boulevard, I-240 and I-55; on the north by North Parkway; on the east by East Parkway, Hollywood Street, Semmes Avenue, Lamar Avenue and Getwell Road; and on the south by Raines Road.

The corridor contains a diverse mix of major land uses including the Medical Center, the City of Memphis Fairgrounds Complex, the Memphis Depot, the Memphis Airport, and the FedEx package handling facility. The Airport and the Federal Express hub are among the largest individual employers in the region. The Memphis Depot property represents a substantial potential for new employment in the corridor over the next 20 years. Overall, by the final forecast year, the corridor is expected to provide more than 202,000 jobs, about a quarter of the total jobs in the region **(**MATA, 2001, based on MPO data).

The corridor also has an abundance of low and medium density residential development. Nearly 58,000 households are expected to make their home in the corridor by the year 2023. The corridor's population represents a broad range of income levels. According to the 1990 census, one-third of the residents in the corridor are below the federal poverty level. Low-income census tracts are found in the vicinity of South Parkway and Lamar Avenue, as well as in the areas east of I-240 and I-55 **(**This analysis was done in 2000-2001 before income data was available from the 2000 US Census). Low-income residents in the corridor would benefit from improved transit that would increase their accessibility to jobs, training and educational opportunities, and other services.

Passenger Terminals

In order to supplement the three existing transfer facilities (North End Terminal, Central Station, and American Way Transit Center), this plan includes two major inter-modal terminals, five smaller transit centers and six park and ride lots located throughout the Memphis area. These include:

- Arena Inter-modal Transfer Facility -- The development of the southern section of downtown is focused on sports facilities and entertainment establishments, which have created a demand for a new transportation hub in that area. As a major attraction area, serviced directly by bus and in proximity to the downtown rail system, a multi-modal parking and transfer facility has been included as part of the development of the FedEx Forum. This Inter-modal Transfer Facility (ITF) will consist of a bus transfer center with a park-and-ride component and a customer service area. The ITF will improve the efficiency of the transit system and allow people who drive into the area to use public transit to access the rest of downtown without generating additional automobile trips.

- South Inter-modal Terminal -- This facility will be a major focal point for local transit services in Whitehaven and South Memphis and improve MATA's ability to make efficient connections to downtown and the Airport. It will serve as a major connection for bus passengers traveling east and west in the southern part of Memphis. A major intercity bus carrier and taxis will also occupy the facility. Future uses include new bus routes serving growth areas to the south, and a light rail station.

- Suburban Transit Centers -- A system of small transit centers is being developed as hubs for transfers among bus routes in various suburban areas. These centers would be smaller than inter-modal terminals and typically include canopy-covered bus bays, indoor passenger waiting area, customer service area and parking for park-and-ride users. The American Way Transit Center opened in 2001 to serve southeast Memphis. Other areas where suburban transit centers are planned include: Frayser, Raleigh, Cordova, East Memphis, and southwest Memphis.

- Park-and-Ride Lots -- Lots designed primarily for park-and-ride used in conjunction with express bus service have been identified at key interchanges on the portions of I-40 and I-55 that have High Occupancy Vehicle (HOV) lanes. The plan includes six lots. In addition, the Inter-modal Terminals, most Suburban Transit Centers and some rail stations will also provide parking for park-and-ride use.

4. Other Capital Projects

Capital projects are also necessary to replace and expand the vehicle fleet; maintain facilities and equipment; and make minor adjustments to infrastructure. The projects included in this category include the following:

- Fixed Route Buses -- replacement of buses that have reached the end of their useful life, and expansion of the fleet
- Para-transit Buses -- replacement of buses that have reached the end of their useful life, and expansion of the fleet
- Trolley Vehicles -- expansion of the fleet

- Facility Improvements -- upgrading, replacement, and major maintenance of existing infrastructure, such as passenger facilities, bike racks, rail-related equipment, and operating/maintenance facilities
- Advanced Public Transportation Systems -- improvements to communications systems, data collection equipment and software, security cameras and other applications of ITS technologies to improve efficiency and effectiveness of transit service delivery
- Service Vehicles - replacement of pool vehicles used in day-to-day monitoring and maintenance of the system

5. Service Improvements

Transit operations are supported with a combination of passenger fares, other system-generated revenues (e.g. advertising), and funds provided by the City of Memphis, TDOT, and FTA. MATA is constantly monitoring the system to be able to match the supply of transit service to demand, based on available financial resources. With regard to existing fixed route bus routes and rail lines, adjustments in routing, headways, span of service, and days of service can be expected from time to time to optimize service levels based on usage and requests from the public. MATA continually markets the transit system through promotion multi-ride passes and other methods to make the public more aware of available services.

With regard to new routes, growth patterns are monitored and routes are added, generally in outlying areas, when development levels reach a minimum level to support fixed route transit service, subject to approval by affected units of local government. Historically, demand for service in these outlying growth areas has been generated by Memphis residents reverse commuting to jobs in the suburbs. This market is expected to grow in the future and be supplemented by more suburban residents traveling to jobs and other activities by transit. Growth areas that have been targeted for new fixed route bus service over the plan period include:

- Cordova
- Eastern Shelby County (east of the City of Memphis)
- North Shelby County (north of the City of Memphis)
- Northern Mississippi

In conjunction with implementation of the system of passenger terminals, the fixed route bus system will evolve into a hub-and-spoke system.

New express bus routes are also planned for implementation in conjunction with park-and-ride lots and HOV lanes on I-40 and I-55.

Para-transit service is made available to match the route coverage and span of service of the fixed route bus and rail service.

6. Transit Summary

It should be noted that since the adoption of the MPO's *2000 Long Range Transportation Plan*, the MPO and the Memphis Area Transit Authority (MPO) have focused on detailed planning for the implementation of the fixed guideway element. Specifically, since 2000 MATA has completed a comprehensive review of the three alternatives fixed guideway corridors and, based on those analyses, determined that the Downtown-Airport Corridor is the best appropriate. Following this alternative section, further analyses have also been conducted including another alternative study and an environmental impact statement. In addition, the Medical Center Rail Extension has progressed through the project development process and the American Way Transit Center is now in operation.

In short, MATA has remained focused since the 2000 Long-Range Transportation on moving projects forward that were identified in the plan. Essentially, MATA has been working under the assumption that once the top priority corridor progresses to the engineering phase, revisiting the regional transit plan in conjunction with the 2006 Long Range Transportation plan update would be appropriate. At that time, both MATA and the MPO could take advantage of the new travel demand-forecasting model.

LRTP 2026 Projects/Strategies

All the projects in the LRTP support the Light Rail Corridor Development Alternative and thus are supportive of the transit system. However, the most significant transit projects with the highest impact include:

1. **Fixed Guideway Projects**

- Medical Center Extension
- Downtown Airport Corridor
- Southeast Corridor
- South Corridor
- North Corridor Feasibility Study

2. **Passenger Terminals**

- North End Terminal
- Central Station
- American Way Transit Center
- Arena Intermodal Transfer Facility
- South Intermodal Transfer Facility
- Suburban Transit Centers
- Park and Ride Lots

3. Other Capital Projects

- Fixed Route Buses
- Para-transit Buses
- Trolley Vehicles
- Facility Improvements
- Advance Public Transportation Systems
- Service Vehicles

SUPPORT OF LRTP 2026 GOALS

While supporting all of the goals of the LRTP 2026, the transit element specifically addresses the following goals and objectives:

- **Increase accessibility and mobility for people using the MPO's regional transportation network**
  - **Continue to explore the use of existing rail lines for transit service**
  - **Improve transit services to meet additional needs and demands**
  - **Promote the use of employer subsidized transit passes**
  - **Continue to support efforts to secure a permanent and sustainable source of local funding for mass transit**

- **Promote efficient land use and development patterns to ensure safety, economic vitality and to meet existing and future transportation needs**
  - **Promote the concentration of future employment and other activity centers along existing and planned major travel corridors**
  - **Promote infill development that reuses existing resources such as buildings, utilities and roads**

- **Encourage conservation of energy resources in addition to minimizing adverse impacts transportation has on social, economic and environmental attributes of the community**
  - **Promote the selection and use of efficient transportation devices**

- **Develop a cost effective planning process that maximizes community consensus in all aspects of transportation planning**
  - **Support achievement of community consensus on transportation goals**

- **Encourage & provide adequate facilities for non-motorized transportation modes**
  - **Work with MATA to increase options for bicyclists who access mass transit**

- **Increase the safety and security of the transportation system for motorized and non-motorized users**
  - **Encourage policies, plans and transportation projects that eliminate unsafe designs and conditions or provide projects that increase safety for users**

- **Continue to develop a multi-modal transportation network that utilizes strategies for addressing congestion management and air quality issues in the MPO region**
  - **Continue to implement and promote strategies and policies such as access control, HOV facilities, travel demand management, mass transit & alternative transportation to improve congestion conditions**

C. Freight

The movement of freight is a multi-billion-dollar industry in the Memphis MPO area. With its natural and manmade resources, strong and stable economic base factors throughout the region, Memphis has positioned itself as a major center for global logistics and is considered as a national hub for the efficient and reliable movement of goods. The Memphis MPO area has major port, rail and air facilities located here; as well as, two (2) major interstate highways (I-40 and I-55) which intersects and provide efficient movement of goods through Memphis to all sections of the United States. In addition to, the planned construction of Interstate 69, which will have a major impact on the future movement of goods from Canada to Mexico and is, expected to pass directly through the Memphis region.

The movement of time-sensitive products is handled by Memphis International Airport. The International Port of Memphis handles the railways and highways. How effectively these requirements are served directly determines the competitive edge for attracting and retaining industries and distribution companies within the Memphis MPO area.

The Freight Committee of the Memphis MPO represents the region's freight community. This committee meets regularly to discuss various plan development processes and to recommend long and short-term strategies to address freight issues. The committee's principal concern consists of the movement of goods along interstate highways and major arterials, although the committee deliberates all forms of freight transportation.

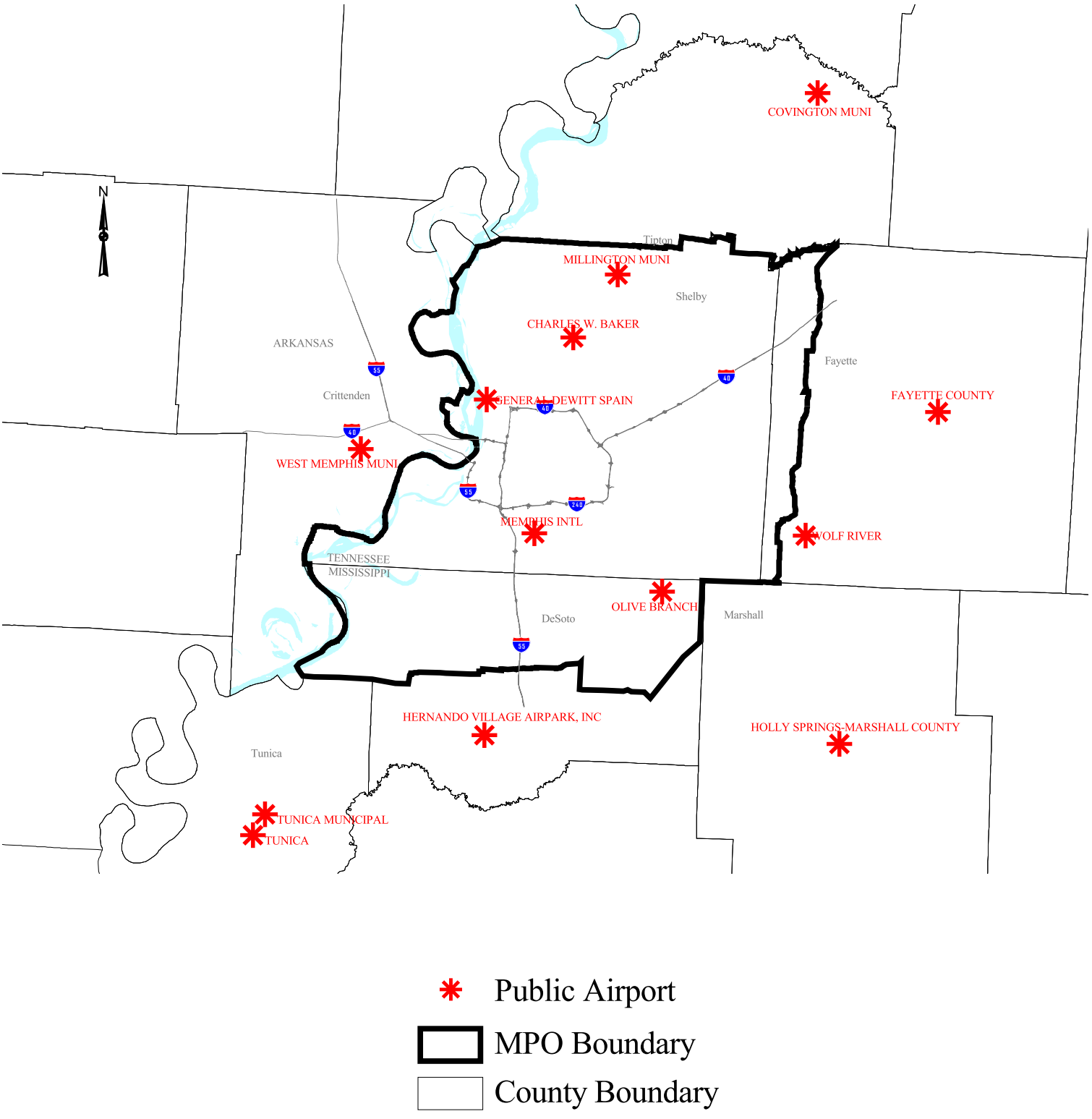
The section below examines various freight movement requirements, the freight transportation system, the freight transportation system's inter-relationships, and the strategies used to identify and select projects that will encourage future growth. Five types of freight transportation/facilities are discussed: air, rail, port, truck and intermodal facilities.

1. Aviation

Background

There are four significant airports in the MPO area: Olive Branch Airport, Millington Municipal Airport, West Memphis Municipal Airport and the Memphis International Airport **(see Figure 11, Existing Regional Airports)** in addition to numerous small airfields and heliports/helipads. The Memphis International Airport is the largest of the four and is the home of FedEx Corporation and a regional hub for Northwest Airlines. As such, it has been the world's busiest cargo airport for the past 12 years handling in excess of three million metric tons each year. Among U.S. airports, Memphis International ranks 25th in the total number of air operations. The Memphis International Airport has three north-south runways and one east-west runway allowing for multiple landings and takeoffs to accommodate peak operation requirements and the world's largest cargo jets. Memphis International Airport is the only air facility in the MPO area that handles a significant amount of air cargo.

Figure 11
Existing Regional Airports



Source: U.S. Department of Transportation, Bureau of Transportation Statistics, National Transportation Atlas Database 2001.

The majority of the information in the air transportation section is derived from Memphis International Airport's *Master Plan Update* (2000), the annual reports (1989 through 2003) of the Memphis and Shelby County Airport Authority (MSCAA) and State of TN Aviation Plan.

Airport Growth and Congestion

Table 9 shows the growth of airport operations (landings and takeoffs), cargo handled, and enplaned (leaving by plane) passengers at Memphis International Airport from 1992 through 2003. Between 1992 and 2003, operations increased by 29%, total cargo increased by 139% and enplaned passengers increased by 39%. Based on linear projections utilizing this data, between 2003 and 2026 operations for the airport are projected to increase by 52%, total cargo will increase by 118% and enplaned passengers by 79%.

Table 9
Memphis International Airport Growth History and Projections

Year			Total Cargo	Enplaned
		Operations*	In Metric Tons*	Passengers*
1992		268,680	1,413,043	3,959,026
1993		254,377	1,449,828	3,793,210
1994		263,324	1,653,269	3,978,147
1995		273,961	1,712,251	4,389,721
1996		274,920	1,933,831	4,694,662
1997		290,358	2,233,262	4,958,520
1998		280,244	2,368,975	4,816,337
1999		290,346	2,412,907	5,106,025
2000		320,258	2,489,078	5,801,068
2001		327,456	2,631,631	5,601,272
2002		339,102	3,390,799	5,306,473
2003		346,636	3,377,262	5,422,276
2004	**	342,994	3,652,280	5,723,095
2006	**	357,639	4,105,854	5,982,674
2016	**	430,864	6,373,726	7,280,569
2026	**	504,089	8,641,598	8,578,465

* Memphis and Shelby County Airport Authority Data. Data for 2003 include estimates for December 2003. Data Exclude Military and General Aviation Operations.
** MPO Horizon-Year Projections by Linear Regression.

This tremendous growth has contributed to the congestion of both the on-site and nearby off-site transportation systems. Much of the runway, airport terminal, and parking area congestion experienced in the 1980s and 1990s was addressed by the recommendations and the implementation of the airport's *1986 Master Plan*. More than $600 million of

improvements were made in the Memphis International Airport area over the last nine years.

Figure 12, Memphis International Airport Improvement Project 1989-2003, illustrates on-site airport improvement projects since 1989. They include:

- Constructing a new north-south runway
- Reconstructing the two older north-south runways and their taxiways
- Expanding and improving terminal concourses
- Expanding FedEx's sorting facility
- Constructing the UPS sorting facility
- Adding parking garage space.

Included in the airport's current master plan are a number of on-site projects that are planned but have not yet been constructed. **(See Figure 13, Memphis International Airport Planned Improvement Projects.)** They include:

- Expanding and improving additional terminal concourses
- Constructing new cargo facilities on the south and east sides of the airport
- Expanding the parking garage to 3,200 total spaces.

Off-site transportation improvements in the airport area since 1989 are also illustrated on **Figure 12.** They include:

- Adding parking areas for employees
- Moving rental car operations north of Democrat Road
- Utilizing additional shuttle buses for employees and passengers
- Widening Winchester Road westward to the airport's entrance
- Extending American Way over the Burlington Northern Santa Fe Railroad and connecting to Tchulahoma Road at Democrat Road.

In addition, more than 1,300 airport-area homes have been purchased over the last 15 years to reduce noise impacts of airport operations on residential areas. The purchasing of these homes has assisted in the reduction of the number of private vehicle trips on airport-area roadways.

Figure 12
Memphis International Airport Improvement Projects, 1989-2003

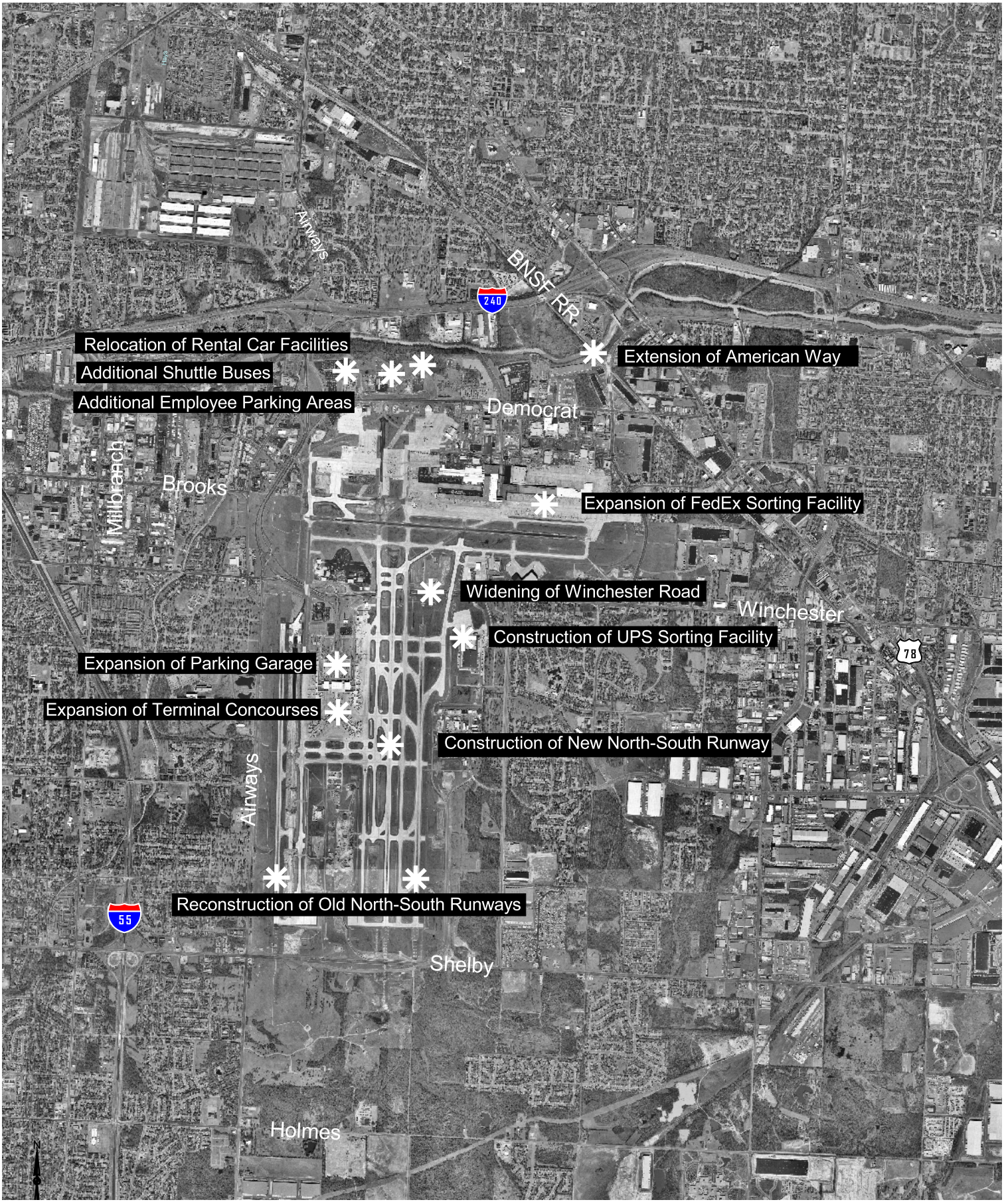
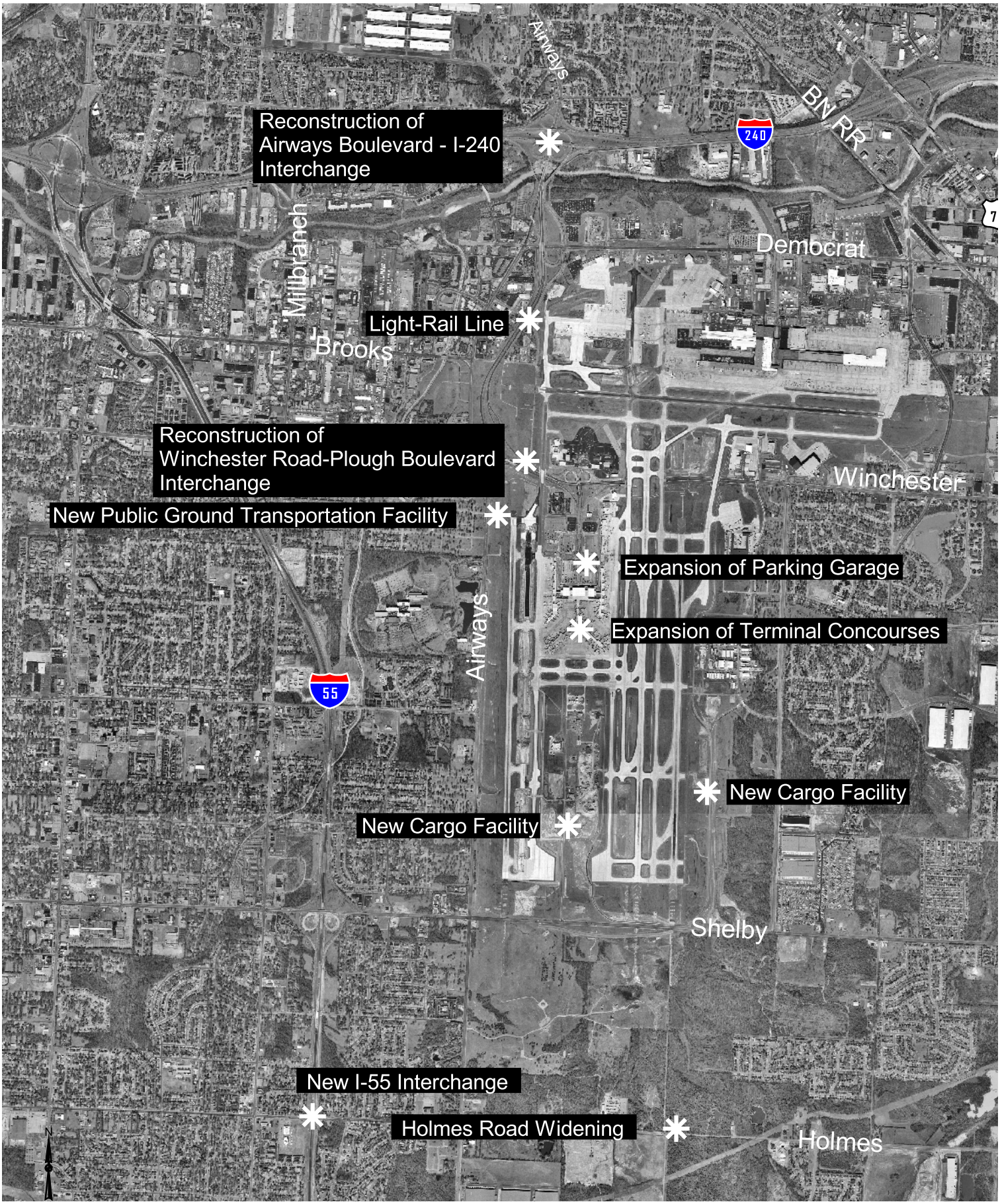


Figure 13
Memphis International Airport Planned Improvement Projects



Future Growth Implications

The major freight operation at the airport is FedEx Corporation's sorting activity, which handles more than 95 percent of the airport's total cargo tonnage. Most of these time-sensitive packages and mail items arrive by plane, are sorted on-site, and then depart by plane. At the present time, much of this activity occurs late at night. Therefore, traffic generated by FedEx Corporation employees does not mix with local morning and/or afternoon rush-hour traffic. However, according to the Airports Council International-North America, Memphis International Airport ranks first in the total enplaned and deplaned cargo handled by North American Airports. Moreover, MSCAA notes in their 2000 master plan, current levels of cargo activity are anticipated to continue to increase. In 2001, a service agreement was reached between FedEx Corporation and US Postal Service that has subsequently increased daytime sorting activities at FedEx. As a result, daytime peak-hour congestion around the airport has also increased. As a resolution to this peak-hour congestion issue, FedEx Corporation is anticipated to expand their sorting facility complex.

An additional contributor to traffic congestion around the Memphis International Airport is the Northwest Airlines' hub, which serves mostly passenger traffic at present, but also handles some cargo. According to the MSCAA's *Master Plan* (2000), Northwest's cargo and passenger operations are projected to increase in the future and, as a result, may affect daytime traffic.

Finally, higher levels of employment in the airport area are predicted in the future land use analyses in this plan. The main airport-area traffic zone was identified as a "*special generator*" in the travel demand-forecasting model to help predict future transportation access requirements.

Conclusion

In view of the fact that the Memphis MPO area is the home base for FedEx Corporation and one of Northwest Airline's major hubs, future growth in airport operations, cargo and enplaned passengers has been projected to increase. As a result of this growth, congestion and accessibility in and around the airport has also been projected to increase as well. As a resolution to address the mounting congestion and accessibility issues surrounding the Memphis International Airport, the LRTP 2026 contains several projects, which directly impact air transportation issues.

LRTP 2026 Projects/Strategies

The most significant projects in the LRTP 2026 that support the aviation element include:

- Widening and reconstruction of Winchester Road and the Winchester Road-Plough Boulevard interchange
- Reconstruction of the Airways Boulevard at I-240 South interchange
- Widening Holmes Road and the addition of a Holmes Road interchange at I-55 to provide an alternate access route to the airport
- Construction of the Downtown-Airport light-rail line
- I-69

SUPPORT OF LRTP 2026 GOALS

While supporting all of the goals of the LRTP 2026, the aviation element of the transportation system specifically addresses the following goals:

- **Encourage conservation of energy resources in addition to minimizing adverse impacts transportation has on social, economic and environmental attributes of the community**

  - Minimize transportation noise impacts

- **Encourage improvements to and the expansion of freight facilities to ensure that Memphis maintains its leading role in global logistics**

  -Work with the MSCAA and IPM to obtain funding for projects designated in their master plans

2. Rail Transportation

Inventory

The Memphis MPO area is served by five Class I freight railroads each of which operates a intermodal freight terminal in the Memphis area. **Figure 14, Existing Railroad Facilities,** shows the main routes of each railroad through the Memphis region and **Table 10, Freight Railroad Operations and Facilities in the Memphis Region,** provides information on the railroad, area of operation and intermodal facilities they operate. In addition to the freight service, Amtrak operates passenger service from Chicago to New Orleans along the CN tracks. The City of New Orleans passenger service occurs daily in each direction from Central Station in the South Main area of Downtown Memphis.

Information in this section is derived from several sources with the understanding that most cargo information for railroads is considered proprietary by the shippers and carriers. The sources include: the *Presidents Island Industry Intermodal Survey Summary Report* (1995), *The Frank C. Pidgeon Intermodal Facility and Rail Access Feasibility/Cost Study* (1997) by Carter & Burgess, Inc., the *MJIT (Memphis Joint Intermodal Terminal) Project Final Report* (1997) by Don Breazeale & Associates, the *Rail System Inventory, Tennessee Rail System Plan* (2003) by ARCADIS G&M, Inc., and the State of Tennessee Department of Transportation's *Latin-American Trade and Transportation Study* (1997). The Presidents Island survey dealt with commodity movements originating and passing through the Presidents Island river port. The Carter & Burgess and Breazeale studies focused on railroad movements in the Memphis MPO area and the feasibility of the proposed Super Terminal transfer yard (Memphis Intermodal Terminal). The ARCADIS and Latin-American studies were statewide analyses of railroad freight and passenger operations with no data provided for counties or sub-regions.

Railroad yard lift capacities are noted in **Table 10, Freight Railroad Operations and Facilities In The Memphis Region.** This table shows data for lifts on trailers-on-flat-car (TOFC) and containers-on-flat-car (COFC). The greatest congestion is at BNSF's Tennessee Yard. The Carter & Burgess report *The Frank C. Pidgeon Intermodal Facility and Rail Access Feasibility/Cost Study* (1997) projected a doubling of lift-demand between 1987 and 2016. With potential lifts in excess of 1.2 million in the future, the current capacity of these facilities is not adequate to meet the need. The Carter & Burgess report recommends the construction of the Memphis Intermodal Facility to increase the regions capacity. The CN and CSX have reached agreement with the City of Memphis, Shelby County, and the MSCPC to begin developing the Memphis Intermodal Terminal, a state-of-the-art intermodal facility to be built in the Frank C. Pidgeon Industrial Park in southwestern Memphis. Located on public land, the private rail investment in the facility is expected to total $25 million creating a 155-acre terminal with an annual capacity of 200,000 lifts. The site offers more than 3,000 acres for industrial development with land available for expansion of the terminal.

Figure 14
Existing Rail Facilities

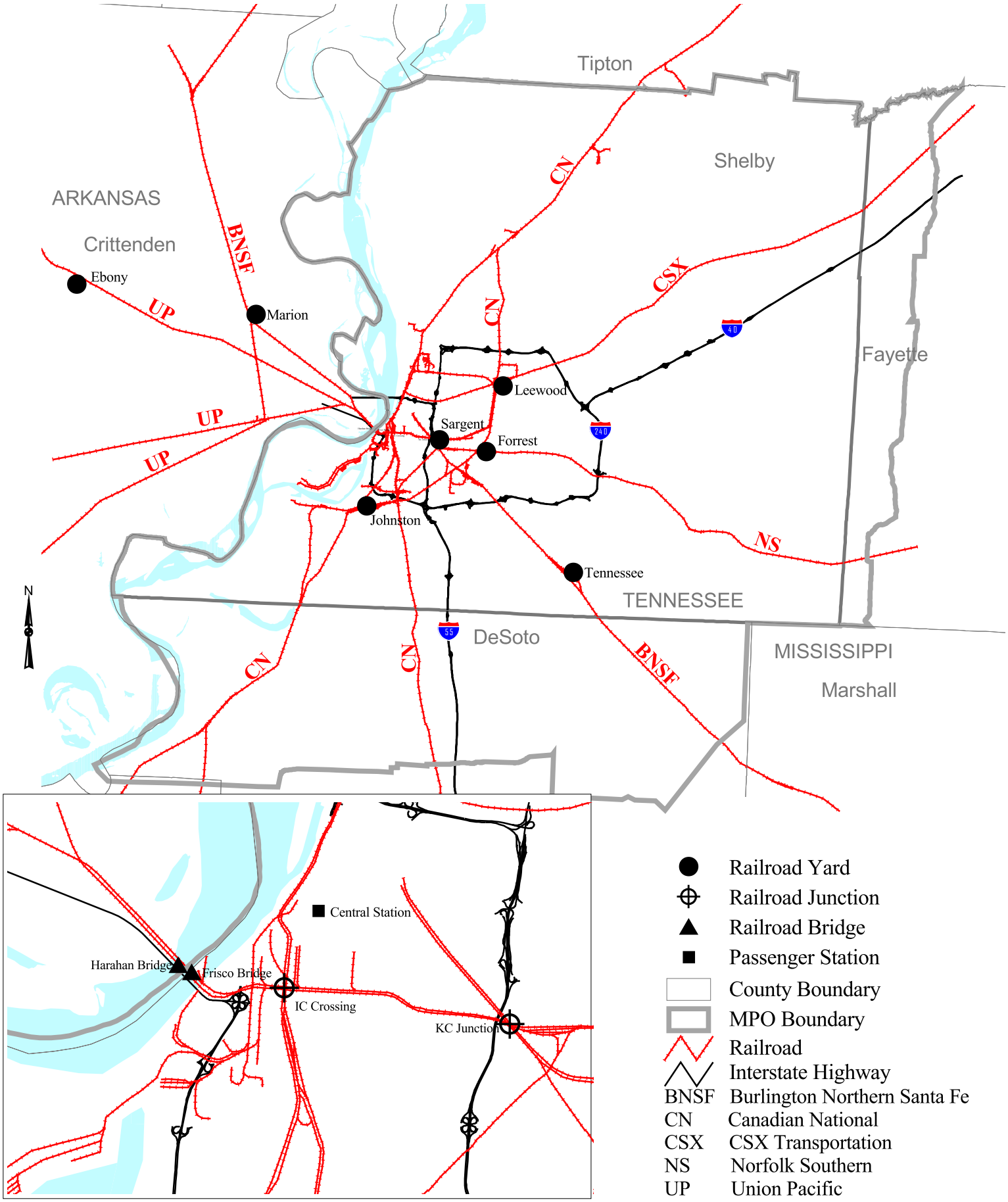


Table 10
Freight Railroad Operations and Facilities In The Memphis Region

Railroad	Area of Operation	Intermodal Facility	Facility Capacity	Number of Lifts (2000)
Burlington Northern-Santa Fe (BNSF)	All areas west of the Mississippi River and connecting in Memphis to Mobile, Alabama east of the Mississippi River	Tennessee Yard located at Shelby Drive and U.S 78	100,000	148,521
		Marion, AR	100,000	72,556
Canadian National (CN)	Generally along the East side of the Mississippi River from Mobile, AL and New Orleans, LA through Memphis to Chicago and into Canada	Johnson Yard located at U.S 61 and I-55	125,000	N/A
CSX	East of the Mississippi River serving all major East Coast cities from Boston to Miami with a western terminus of Memphis.	Johnson Yard located at U.S 61 and I-55	70,000	60,692
		Leewood Yard located at Chelsea and Hollywood	20,000	15,525
Norfolk Southern (NS)	East of the Mississippi River from Buffalo and New York City, NY through the Appalachanian area and Great Lake industrial areas with a western terminus in Memphis.	Forrest Yard located at Southern Avenue and Airways	100,000	75,000
Union Pacific (UP)	West of the Mississippi River from Duluth, MN to Brownsville, TX and from Seattle, WA to Los Angeles, CA with connections via Denver, CO and Salt Lake, UT to the Northwest and El Paso, TX and Phoenix, AZ to the southwest	Marion Yard located in Ebony, AR	450,000	251,000

Source: Railroad System and Division Maps (each railroad), ARCADIS and Carter and Burgess, Inc.

The intermodal facility will feature five tracks with a total pad length of 20,000 feet for the movement of trailers and containers on and off railcars. The terminal will have parking spots for 1,800 trailers or container chassis. CN and CSX are committed to this project and the other railroads have been invited to participate. The concept of the facility concentrates all COFC/TOFC transfers in one location to facilitate the transfer of cargo between rail lines. Rail-to-rail transfers eliminate existing trucking drayage between railroad yards and significantly lessen the number of trucks traveling through residential areas. The MPO Transportation Plan foresees an additional 10,000 trucks per day by 2016 based on lift predictions in the Breazeale study and includes the intermodal facility in its future traffic zone employment projections.

The BNSF is planning an expansion of its capacity in the region. Options include expansion of the Tennessee Yard at Shelby Drive and U.S. 78 or relocation of the yard to the southeast. If the yard was moved southeast it would remain both within the Memphis economic region and along the BNSF-U.S. 78 corridor in Marshall County, MS. This expansion is planned to bring BNSF's lift capacity in the area to 1 million over the next 20 years.

The State of Tennessee Department of Transportation's *Latin-American Trade and Transportation Study* (1997) predicted that commodities shipped to the Gulf States would increase from 1,712,235 tons in 1996 to 7,107,540 tons in 2020. With the existing and planned expansion of the capacity of the area's intermodal transfer facilities, Memphis is in a position to compete for this increased activity as east-west shipments require transfer to north-south lines to make required connection to the Gulf in New Orleans and Mobile.

The location of these new and expanding facilities also increases trucking drayage between railroad facilities with impacts on some residential areas surrounding the facilities as well as the regional road network that provides connection to the intermodal facilities. A finding in the Carter Burgess study was a decrease in trucking drayage between intermodal facilities when all operations were consolidated at the proposed facility in Pidgeon Industrial Park. With only the CN and CSX currently planned to locate there, this impact will benefit those neighborhoods near the Leewood and Johnson Yards. The increased volume of containerized freight, along with an increasing number and capacity of lifts east of the Mississippi River, impacts both rail and roadway facilities on both sides of the river. Safe, reliable and efficient movements need to be assured to protect the area's competitive status.

Two railroad bridges span the Mississippi River at Memphis: UP's double-track and BNSF's single-track. **(See Figure 14, Existing Railroad Facilities - Inset.)** Both bridges are located alongside the I-55 Bridge south of Downtown Memphis. The railroad bridges are the only railway crossings of the river from Cairo, Illinois to Vicksburg, Mississippi, a distance of approximately 400 miles.

The Frisco Bridge was completed in 1892, the Harahan Bridge was completed in 1916 and the I-55 Bridge opened in 1949. Memphis lies just to the southeast of the New Madrid Fault Line. The Hernando-DeSoto Bridge (I-40) opened in 1973 and is being

seismically retrofitted to partially address the earthquake risk. Because of the age of the two railroad structures and the I-55 Bridge, seismic retrofitting is not cost-effective. The effects of a devastating earthquake in the Memphis region would likely render these three older facilities useless and would have major impacts on the surface movement of freight throughout the southern portion of the country. A combined highway-railway bridge with multi-tracks is recommended in the Memphis Region Source Book which would replace the Frisco and Harahan railroad bridges while providing additional interstate capacity. The new facility would give the Memphis region two seismic standard highway bridges and secure rail bridges to connect freight facilities on either side of the river. The new bridge should be located with convenient interstate and railway access to the proposed Memphis Intermodal Terminal in Pidgeon Industrial Park. To date Congress has authorized feasibility and location studies for this facility and the MPO is working with Arkansas, Mississippi and Tennessee in developing these studies.

The studies listed above all suggest an increased market share for the MPO and surrounding area in the movement of national and international freight. Meanwhile, changing land uses along some local rail branch service lines has made their future operation questionable. In the past, the former Louisville & Nashville line through midtown Memphis extending northeast toward the Raleigh area was abandoned and acquired for a trail along segments of the former rights-of-way. Currently, the CSX has been allowed to suspend service of a line from Midtown Memphis to the Cordova area. This is often a pre-cursor to abandonment of the line. As the nature of manufacturing changes in the area, other local freight service lines could face similar status.

Conclusion

Points of rail line congestion in the Memphis area were identified in the Carter & Burgess report. The major congestion points noted were the north-south CN crossings of the three east-west lines south of Downtown Memphis (known as the "IC Crossing") and in an area southeast of Downtown where three railroads cross (known as the "KC Junction.") **(See Figure 14, Existing Railroad Facilities - Inset.)** In these locations, operators must come to a halt to determine if the way is clear before moving over the crossing tracks. Other points of congestion are found in areas of reduced speed due to restrictive track geometry and/or hand-thrown switches.

Railroad capacity is related both to the ability of the five railroads to accommodate growth in containerized freight and to effectively transfer those containers within the region. The BNSF clearly has a capacity issue at the Tennessee Yard and the capacity of the other yards combined is not sufficient to address projected volumes of over 1 million lifts a year.

The construction of new intermodal facilities is the responsibility of the railroad companies. BNSF will modernize and expand its operations at the Tennessee Yard or construct a new facility southeast of its current operation in Tennessee. No investment amount has been given to date for this 1 million lift capacity facility. The CN and CSX

will jointly fund the $25 million Memphis Intermodal Terminal in Pidgeon Industrial Park.

Several highway projects are needed to support growth in containerized freight movements in the Memphis region. **Figure 15, Planned Railroad Access Improvements and Overpasses,** illustrates these projects which will improve access for truck-to-rail movements and will further improve access for rail employees and service vehicles.

Railroad versus vehicular congestion and safety is the responsibility of TDOT and the department maintains a prioritized list of rail crossing projects. Through its Freight and Transportation and Safety committees, the MPO recommends projects which relieve congestion and address safety issues. Project selection criteria allows for higher rankings for proposed construction projects that include rail crossing improvements.

Figure 15, Planned Railroad Access Improvements and Overpasses, shows the locations of railway overpasses along local arterials under the jurisdiction of the MPO that will be programmed in this plan for grade separation.

CSX has been granted approval to suspend service on its line from Midtown Memphis to Cordova shown in **Figure 16, CSX Rail Line Suspended for Service,** and could receive approval for abandonment in the future.

A study of the CSX corridor should be undertaken by local government to determine the future use of this corridor and the feasibility of Memphis and Shelby County governments acquiring it. Potential future uses of the CSX rights-of-way include the widening of Mullins Station Road, a rails-to-trails project in the Shelby Farms recreational area, and for possible passenger rail service in the future.

The future of Amtrak and high-speed rail service is being studied across the country. Review of the Amtrak routes for high speed rail shows a significant absence of service in the Mid-South area. While the City of New Orleans service provides people in the Memphis area with access to Chicago and New Orleans, and transfer capability to both the high speed and regular Amtrak service to most major cities in the east and west, such routing does not provide a reasonable alternative to driving or air service.

The Tennessee the Tennessee Rail System Plan, a policy document for TDOT, identifies potential corridors for additional study linking Memphis to the three other major cities in Tennessee. These links would then provide a broader regional connection to such cities as Atlanta, Louisville and Washington.

Figure 15
Planned Railroad Access Improvements and Overpasses

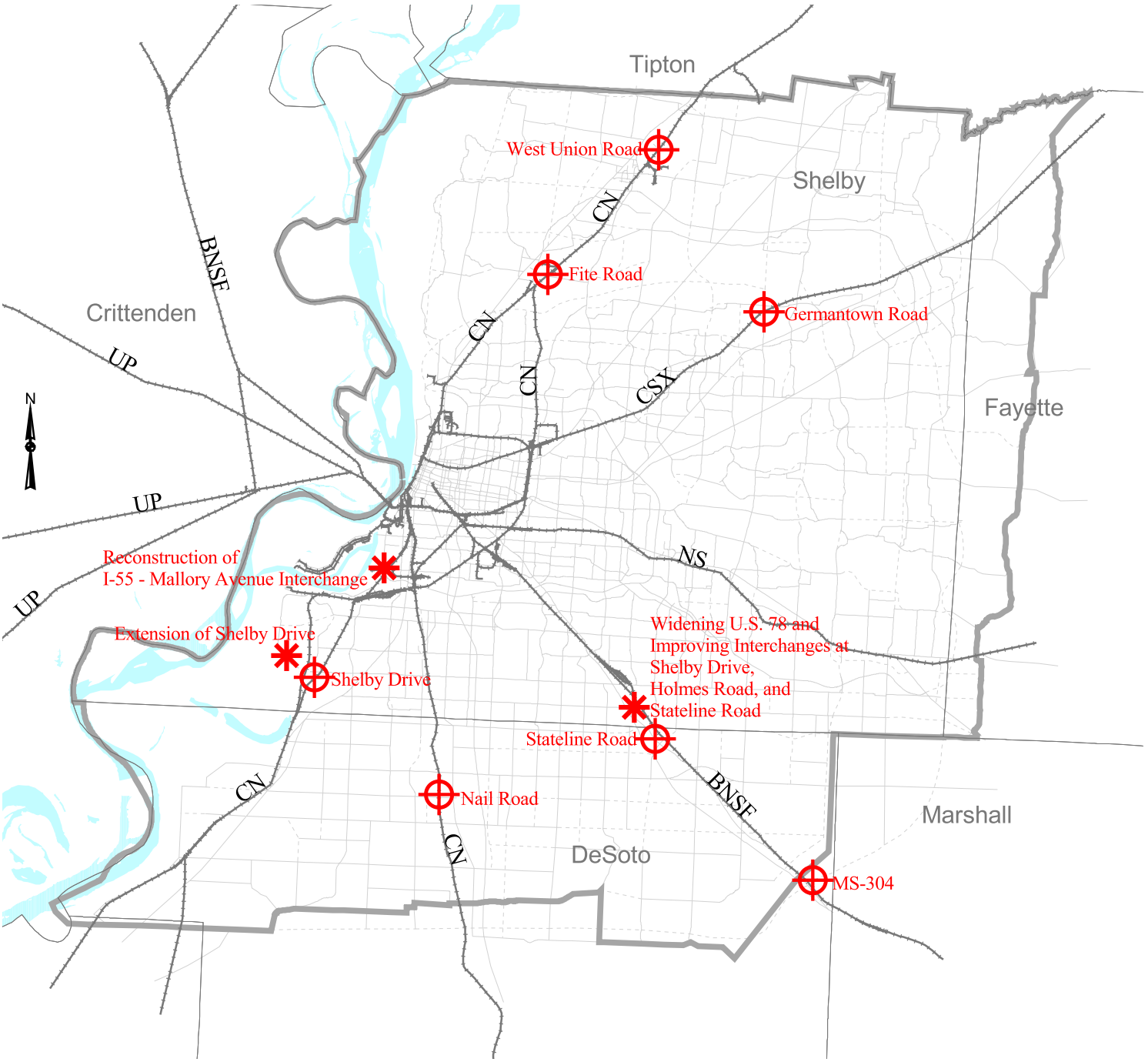


Figure 16
CSX Rail Line Suspended for Service

LRTP 2026 Projects/Strategies

All of the projects in the plan that involve freight movement impact rail transportation and facilities. However, the most significant projects in the LRTP 2026 that support the rail element include:

1. Roadway Projects

- Reconstruct the I-55 and Mallory Avenue interchange
- Widen and extend Shelby Drive to improve access to the Memphis Intermodal Terminal site and Pidgeon Industrial Park. Shelby Drive should be considered for designation as a NHS Connector facility.
- Widen U.S. 78 with interchange improvements at Shelby Dr., Holmes Rd., and future Stateline Rd.
- Complete the location study of a multi-modal bridge as a third crossing of the Mississippi River in the Memphis region (Illustrative Project)
- I-69

2. Overpasses

- MS 304 over BNSF in Olive Branch
- Nail Road over CN in Horn Lake
- Stateline Road over BN at the Tennessee-Mississippi state line
- Shelby Drive over two CN lines near Pidgeon Industrial Park
- Fite Road over CN south of Millington
- West Union Road over CN in Millington
- Germantown Road over CSX in Bartlett.

SUPPORT OF LRTP 2026 GOALS

While supporting all of the goals of the LRTP 2026, the rail transportation element of the transportation system specifically addresses the following goals and objectives:

• Promote efficient land use and development patterns to ensure safety, economic vitality and to meet existing and future transportation needs

- Continue to modernize rail signals to lessen rail-auto conflicts

• Encourage conservation of energy resources in addition to minimizing adverse impacts transportation has on social, economic and environmental attributes of the community

- **Encourage improvements to and the expansion of freight facilities to ensure that Memphis maintains its leading role in global logistics**
  - **Work with regional Class I railroads to ensure that the Memphis Intermodal Terminal is developed and operating by 2006**
  - **Work with the MSCAA and IPM to obtain funding for projects designated in their master plans**
  - **Work with Federal and State departments of transportation to obtain funding for the construction of I-69, I-22, I-269 and the new I-55 highway-railway bridge**

3. Port Facilities

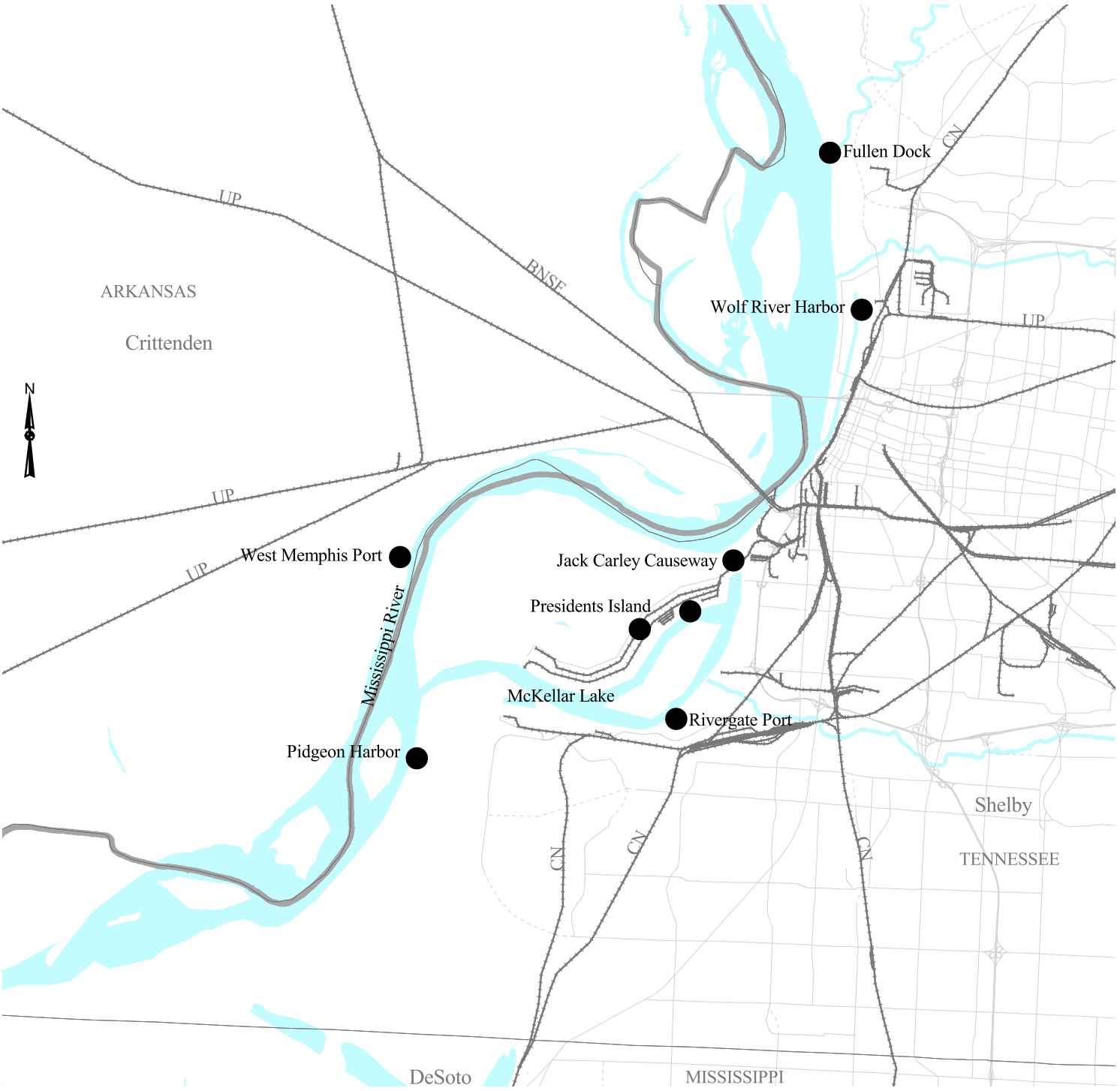
Background

The International Port of Memphis (IPM) is the fourth largest inland port in the U.S. The port includes the Tennessee and Arkansas sides of the Mississippi River from River Mile 725 to River Mile 740. The IPM is 400 river miles from St. Louis and 600 river miles from New Orleans. Within the 15-mile jurisdiction of the IPM are 68 water-fronted facilities— 37 of which are terminal facilities. According to statistics provided by the IPM, the port offers six grain elevators with 2,238 feet of berthing space supplemented by 50 concrete silos and 25 steel tanks with a storage capacity of 12.3 million bushels; 18 facilities with 6,313 feet of berthing space and 130 storage tanks with a capacity of 88,956,750 gallons handle liquid bulk commodities. Furthermore, liquid bulk commodities are handled by eight facilities with 4,404 feet of berthing space and a storage capacity of 581,000 tons.

The IPM's jurisdiction includes the Presidents Island-McKellar Lake-Rivergate Port-Pidgeon Harbor complex south of downtown; the Wolf River Harbor and Fullen Dock, located north of Downtown Memphis; and the West Memphis Harbor in West Memphis, Arkansas **(See Figure 17, International Port of Memphis - Existing Facilities).** At present, 95% of the industries and the majority of activities in the IPM are in the Presidents Island complex. The President's Island complex is home to the Premcor petroleum refinery- the only refinery in the State of Tennessee. The refinery has a direct pipeline that carries jet fuel from the refinery located at the port to the Memphis International Airport.

The United States Army, Corps of Engineers Ensley Engineering Yard is located at the IPM. The Yard is part of the Memphis district that covers 355 miles of waterways. The Ensley Yard covers 157 acres and provides repair shops, warehousing, and administrative offices which support the fleet of over 33 vessels.

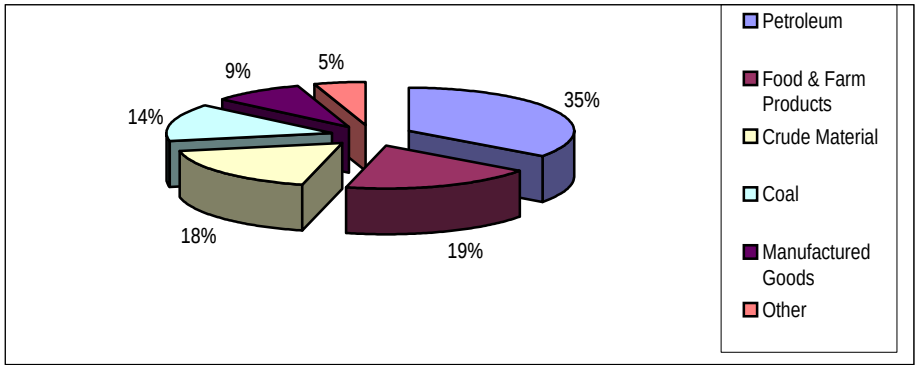
Figure 17
International Port of Memphis - Existing Facilities



Freight Handled and Capacity of Facilities

According to the latest data available from IPM, the port handled a total of 16.9 million tons of goods in 2001. **Figure 18, 2001 Top Commodities for IPM,** illustrates the top five commodities that moved through Memphis that year- petroleum, food and farm products, crude material, coal, and manufactured goods respectively.

Figure 18
2001 Top Commodities for the International Port of Memphis



Source: IPM & U.S. Waterborne Commerce Statistics, 2003

Table 11, International Port of Memphis River Tonnage, shows the total tonnage of shipments received by the IPM from 1992 to 2001. Using this data, a trend analysis was completed to produce forecasts on future river tonnage. These forecasts suggest that IPM will continue to handle larger amounts of cargo through 2026.

Table 11
INTERNATIONAL PORT OF MEMPHIS
RIVER TONNAGE

Year	Total Tonnage
1992	13,281,000
1993	13,333,000
1994	15,680,000
1995	15,945,000
1996	17,300,000
1997	18,012,000
1998	17,211,000
1999	16,811,000
2000	18,269,000
2001	16,907,000
2002	NA
2003	NA
2006	20,728,000*
2016	25,416,000*
2026	30,104,000*

NA: Figure Not Available.
* MPO Forecasts Based On Existing Data from the International Port of Memphis.
Source: International Port of Memphis and U.S. Waterborne Commerce Statistics, 2003.

President's Island and the Wolf River Harbor

At present, the IPM faces several issues that have an impact on its facilities- particularly President's Island and the Wolf River Harbor. Specifically, industries on Presidents Island are accessed by one road only— Jack Carley Causeway, a narrow two-lane road extending westward from the McLemore Avenue interchange at I-55. The causeway, as it crosses the land bridge dividing McKellar Lake and the main channel of the Mississippi River, forms a bottleneck for vehicles traveling between I-55 and the island. This situation is further complicated by the causeway's at-grade intersections over the BNSF rail line also crossing the land bridge.

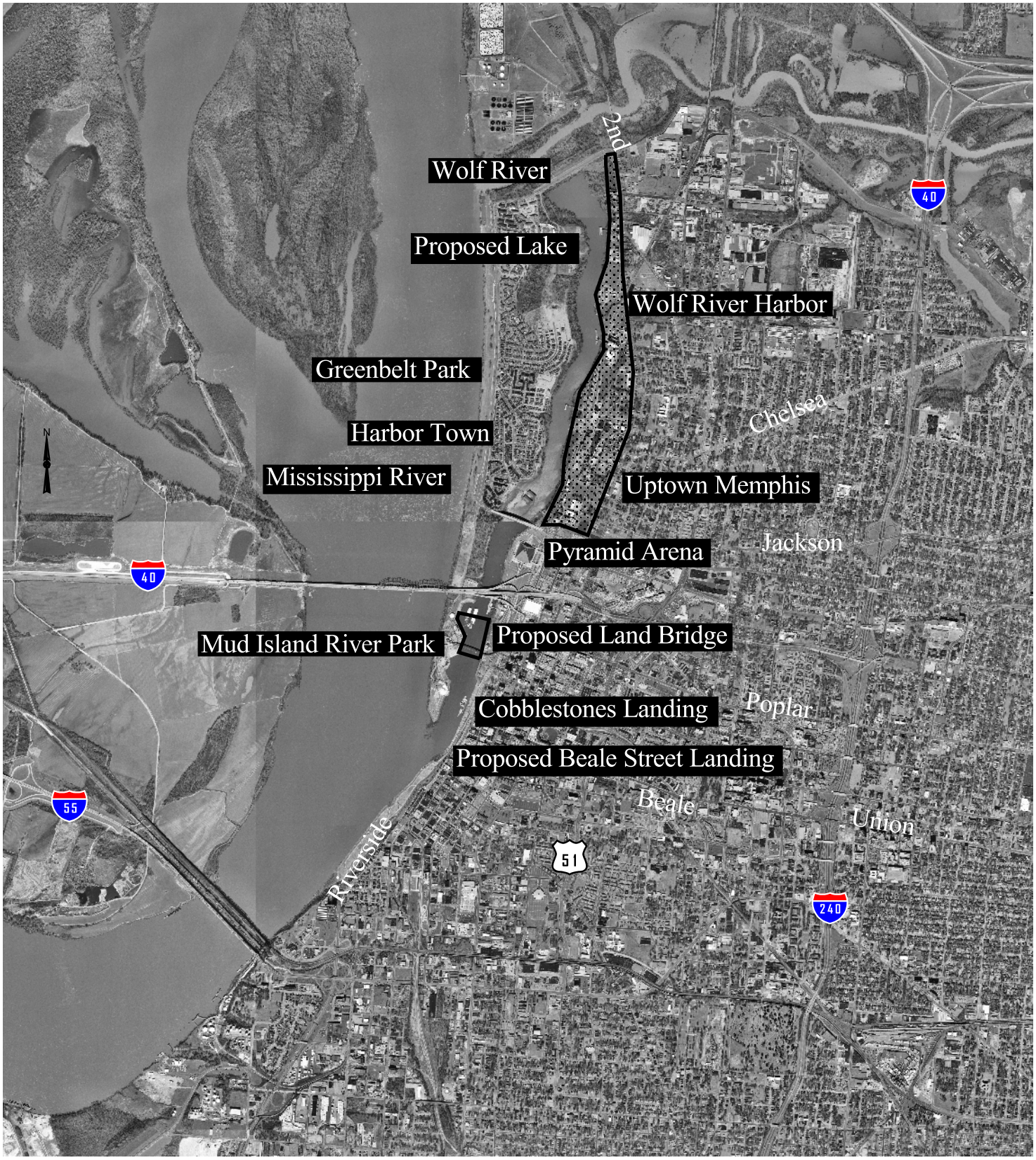
To address the issue of accessibility to President's Island, several potential projects, including improvements to the I-55/Crump interchange and the extension of South Parkway West, would ease congestion and improve access. A westward extension of South Parkway West at its current terminus would take South Parkway West down the river bluff, across a man-made fill area at the northern end of McKellar Lake, then connecting with Jack Carley Causeway. This new point of access not only would provide relief from congestion on the causeway but also would allow an alternative means of ingress/egress if the causeway were blocked by a roadway/railroad accident or if an industrial accident on the island necessitated emergency evacuation.

Like many urban areas seeking to redevelop their downtown area, the city of Memphis has engaged in an aggressive program to include parks, commercial districts and upscale housing along its riverfront. As such the IPM is facing increasing competition for space along those waterways as it seeks to maintain its waterfront access. However, The port is fortunate in that its greatest hub of activity is located in the Presidents Island area several miles removed from redevelopment activities in Downtown Memphis. Several industrial facilities dependent on water access remain along the Wolf River Harbor just north of Downtown. They include Bunge Corporation, Cargill, Inc., Conwood Company, Lafarge Corporation, Lone Star Industries, and Westway Terminal Company, Inc., among others. The U.S. Coast Guard Station also is located here.

The Riverfront Development Corporation (RDC), the agency in charge of redeveloping Memphis's waterfront, has proposed constructing a land bridge across the southern portion of the Wolf River Harbor forming a still-water lake in the lagoon. **(See Figure 19, Downtown Redevelopment & Wolf River Harbor.)** While this project would offer the advantages of reducing pollution and stabilizing fluctuating water levels in the lagoon— thus encouraging the development of housing on the east bank of the harbor— it also would eliminate water access for the industries located on the harbor. Industries there would either lose their river access or be forced to relocate.

The RDC plans a docking facility at the foot of Beale Street south of the lake— but this facility would be limited to passenger vessels only. Even if commercial vessels were allowed to dock there, the Beale Street Landing is located too far south of the Wolf River Harbor to provide any real access to the industrial properties. Therefore, the MPO recommends a study that identifies alternative access points for the industries listed above.

Figure 19
Downtown Redevelopment and Wolf River Harbor



Conclusion

As an intermodal facility, the IPM offers a unique setting for the transportation services in the Memphis area with its convergence of barge, railcars and truck trailers. Moreover, with easy access to the Memphis International Airport and its close proximity to one of the nation's largest waterways (the Mississippi River), the IPM is strategically positioned to provide a competitive advantage for intermodal logistical operations. As the city of Memphis continues to promote itself as a national distribution center, the intermodal facilities offered by IPM make it an important economic contributor to the Memphis region. To continue to position itself as an important regional intermodal facility, the following projects are recommended to support operations of the port:

LRTP 2026 Projects/Strategies

All of the projects in the plan that involve freight movement and traffic congestion impact port facilities to some extent. However, the most significant projects in the LRTP 2026 that support the port facilities element include:

- Extension of South Parkway West
- Improvements to I-55/Crump Interchange
- Beale Street Landing
- Study to Identify Alternative Access Points for Industries Affected by Beale Street Landing

SUPPORT OF LRTP 2026 GOALS

While supporting all of the goals of the LRTP 2026, the port facilities element of the transportation system specifically addresses the following goals:

- **Encourage improvements to and the expansion of freight facilities to ensure that Memphis maintains its leading role in global logistics**

  - Work with the MSCAA and the IPM to obtain funding for projects designated in their master plans

4. Truck Transportation

The Memphis MPO area is a major hub for truck transportation and is home to large trucking companies that include FedEx and MS Carriers. The Memphis Regional Chamber touts the area as a major trucking distribution hub to the nation with over 300 motor freight companies and a wide variety of businesses with state-of-the-art warehousing capabilities. Because of its centralized location, the Memphis region is within a day's drive of two thirds of the U. S. population. In addition to its numerous truck terminals, Memphis has more than 89,000 people (21% of the workforce) employed in distribution and related industries and more than 130 million square feet of distribution space. Memphis area companies like Williams-Sonoma, Nike, Ingram Micro and Brother International each maintain high-tech warehouses with over a million square feet of distribution space.

In the last five years, 78 distribution companies with 15,431 new employees committed to locate or expand in Shelby County. The DeSoto Economic Development Council, during the same period, reported that 33 companies and 2,850 new employees located in DeSoto County, Mississippi. The five largest employers in Crittenden County, Arkansas are all freight-related firms with approximately 2,000 employees.

A. Needs Assessment for Improvements to Truck Transportation System

Because of the commitment to the promotion and expansion of the region as a distribution center, it is critical that the road network be capable of handling the volume created by this expanding industry. Three existing interstates serve the Memphis area. I-40 is an east-west highway from California on the west coast, connecting the three major cities of Tennessee, Knoxville, Nashville and Memphis, to North Carolina on the east coast. I-240 circles the majority of the City of Memphis and provides movement around and within the Memphis urban area. I-55, a north-south highway connects New Orleans, Louisiana, crossing the Mississippi River in Memphis, to St. Louis, Missouri and Chicago, Illinois. The convergence of these three interstates in Memphis helps make the area a prime hub for truck freight movement. While this is a benefit to the economic expansion of the region, it also comes with a cost. The capacity and level of service of the existing transportation system in the Memphis region is affected by this expanding truck activity causing the need for congestion management.

In addition to congestion concerns from truck traffic, other truck and rail issues have been identified in plans completed by the Memphis and Shelby County Office of Planning and Development over the years. These plans cover redevelopment areas, neighborhoods, planning districts and improvement districts and utilized various public planning forums with input from Memphis and Shelby County legislative bodies, planners, engineers and citizens. As early as 1982, the University Planning District Study, proposed improvements to the Southern Railroad and Highland Street intersection, along with improvements to the railroad tracks. Rerouting of truck traffic away from Kansas Elementary School was listed as a recommendation in the South Memphis District Plan of March 1999. A closer examination of the impact of the South Parkway

extension to President's Island was also called for in this plan due to the likely increase in truck traffic throughout neighborhoods along South Parkway. The transportation issues of the 2001 Midtown Corridor East Redevelopment Project included concern over the railroad that traverses the community and how it acts as an intimidating physical barrier to persons without vehicular transportation. The January 2003, revision of the Whitehaven-Levi Planning District Study mentions concerns over illegally parked eighteen-wheelers in neighborhoods. In each of these plans, safety, congestion, and traffic volume were identified as major concerns of the community.

The above plans highlighted specific neighborhood concerns. Other conflicts caused by the location of truck and rail facilities in urban areas can also arise from the following activities:

- Late night deliveries and loading operations that cause concern about light, noise and vibration issues
- Peak-hour deliveries and loading operations creating congestion and traffic interference
- Possible movement of hazardous substances causing safety concerns
- Through-trucks on neighborhood streets and streets with retail commercial creating noise, vibration, safety and inappropriate use of street capacity
- Possible on-street loading with traffic and access interference concerns.

The Memphis MPO Freight Committee is charged with finding solutions to the problems of truck congestion on major corridors, truck interface with traffic on local roads, and the efficient movement of goods and services. These issues are further complicated because of the need to look at the freight industry as a whole. Intermodal freight movement issues transcend the specific concerns caused by only trucks or rail and will be addressed in a comprehensive manner in the "Intermodal Infrastructure" section at the end of this chapter.

Data analysis, identification of major truck freight activity hubs and identification of the corresponding principal freight corridors, all lay the groundwork for how the Memphis MPO will respond to truck freight movement issues in neighborhoods and throughout the region. The following summarizes that groundwork. It also provides a list of projects being proposed to alleviate many of the problems described in this section. These projects are part of the Congestion Management System (CMS) analysis, **Chapter 6,** and included in the Major Road section, **Chapter 5**.

B. Truck Freight Activity in the Memphis Region

In 2002, the Memphis Regional Chamber and the Memphis MPO compiled a database listing freight-related firms in the Memphis area. The firms were identified using the Standard Industrial Classification (SIC) codes for trucking, farm products, warehousing and truck terminal facilities. As a result, there were 275 firms identified.

As shown in **Figure 20, Existing Major Freight Activity Hubs,** the location of the larger firms (those with over 20 employees) indicates that the following areas could be considered major truck freight activity hubs:

- Lamar-Hickory Hill-Olive Branch
- Airport Area
- Depot Area
- South Memphis
- Presidents Island
- West Memphis

These truck freight activity hubs were further analyzed by comparing them to employment centers identified in the Shelby County Growth Plan and 2000 and 2026 Traffic Activity Zone (TAZ) employment data. **Table 12 Freight Activity Hubs, Existing and Future Employment,** shows a major increase in employment estimates in the Airport, Lamar/Hickory Hill and President's Island areas **(supporting data is in Appendix I, Freight Activity Hubs Existing and Future Employment.)**

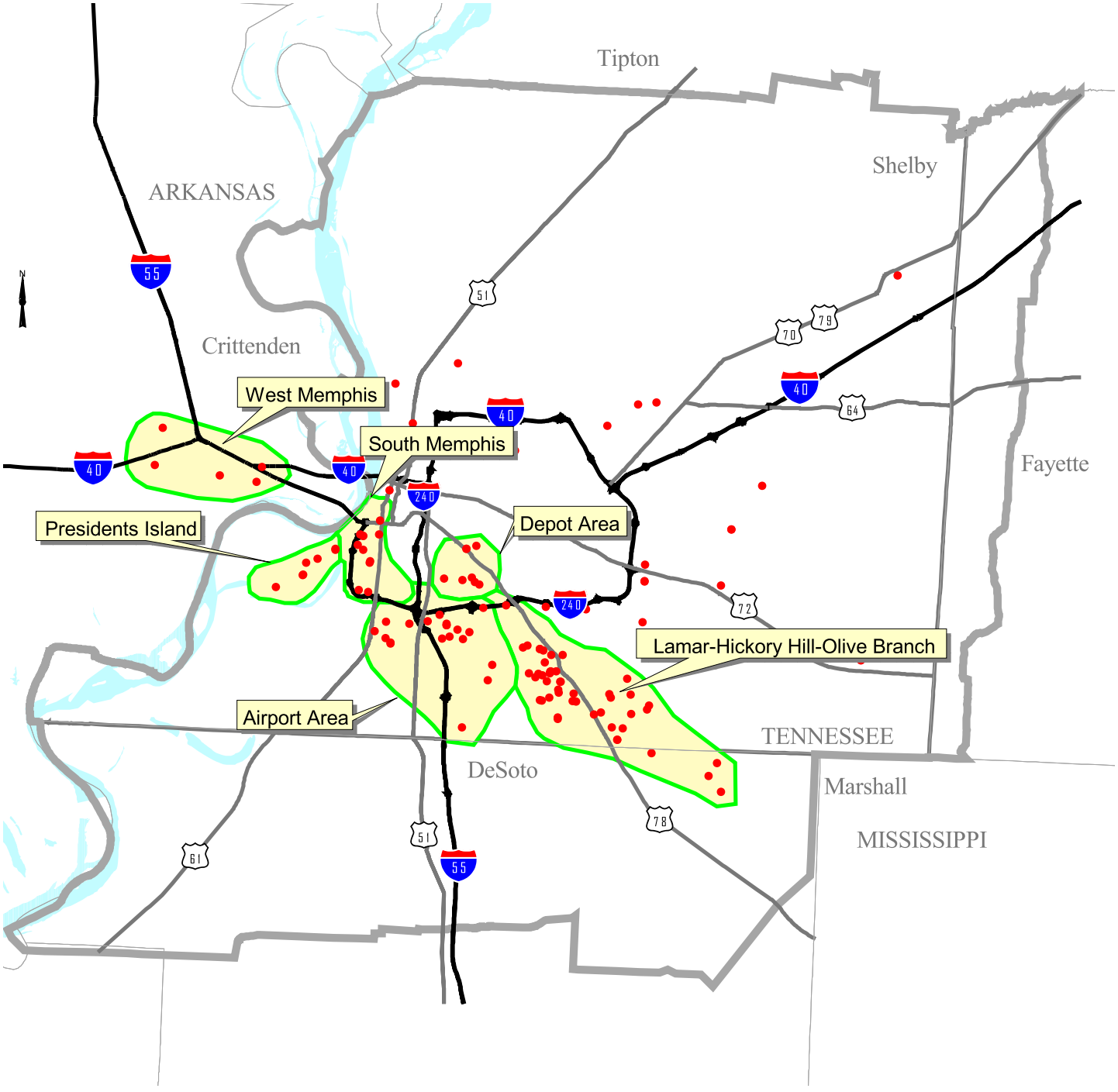
Table 12
Freight Activity Hubs
Existing and Future Employment

Activity Hub	Employment Year 2000	Employment Year 2026	Difference	Percent Change
Airport	61,847	86,297	24,450	39.53
Depot	8,685	9,086	401	4.62
Lamar/Hickory Hill	30,979	49,941	18,962	61.21
Olive Branch	10,384	10,384	0	0.00
President's Island	6,162	8,637	2,475	40,17
South Memphis	11,650	11,642	-8	-0,07
TOTAL	129,707	175,987	46,280	35.68

Source: MPO Light Rail Alternative Land Use Projections

A minimal decrease is estimated to occur in South Memphis and a small increase in employment is estimated for the Depot area, adjacent to the Airport area, for the period of 2000 to 2026. This data illustrates how the southern portion of Shelby County has historically been a prime trucking and distribution area and that employment is anticipated to grow in this area.

Figure 20
Existing Major Truck Freight Activity Hubs



In an effort to quantify truck movements in the above hubs, data was used from President's Island, the only hub where the data was available. The 1995 President's Island Industrial Intermodal Survey identified truck activity at the one ingress/egress point on and off the island. The survey indicated that an average of 12,357 trucks per week arrived at or departed the island that year and the destinations of 48% of these trucks were inside Shelby County. Routes of trucks heading outside Shelby County were:

- 24 percent traveling I-40 to the east
- 15 percent traveling I-40 to the west
- 14 percent traveling I-55 to the south
- 11 percent traveling I-55 to the north
- 10 percent traveling U.S. 78 to the south
- 26 percent traveling other routes

Though the exit points above do not match identically with the Memphis MPO's boundaries, it gives some indication of the truck movements departing the Memphis area.

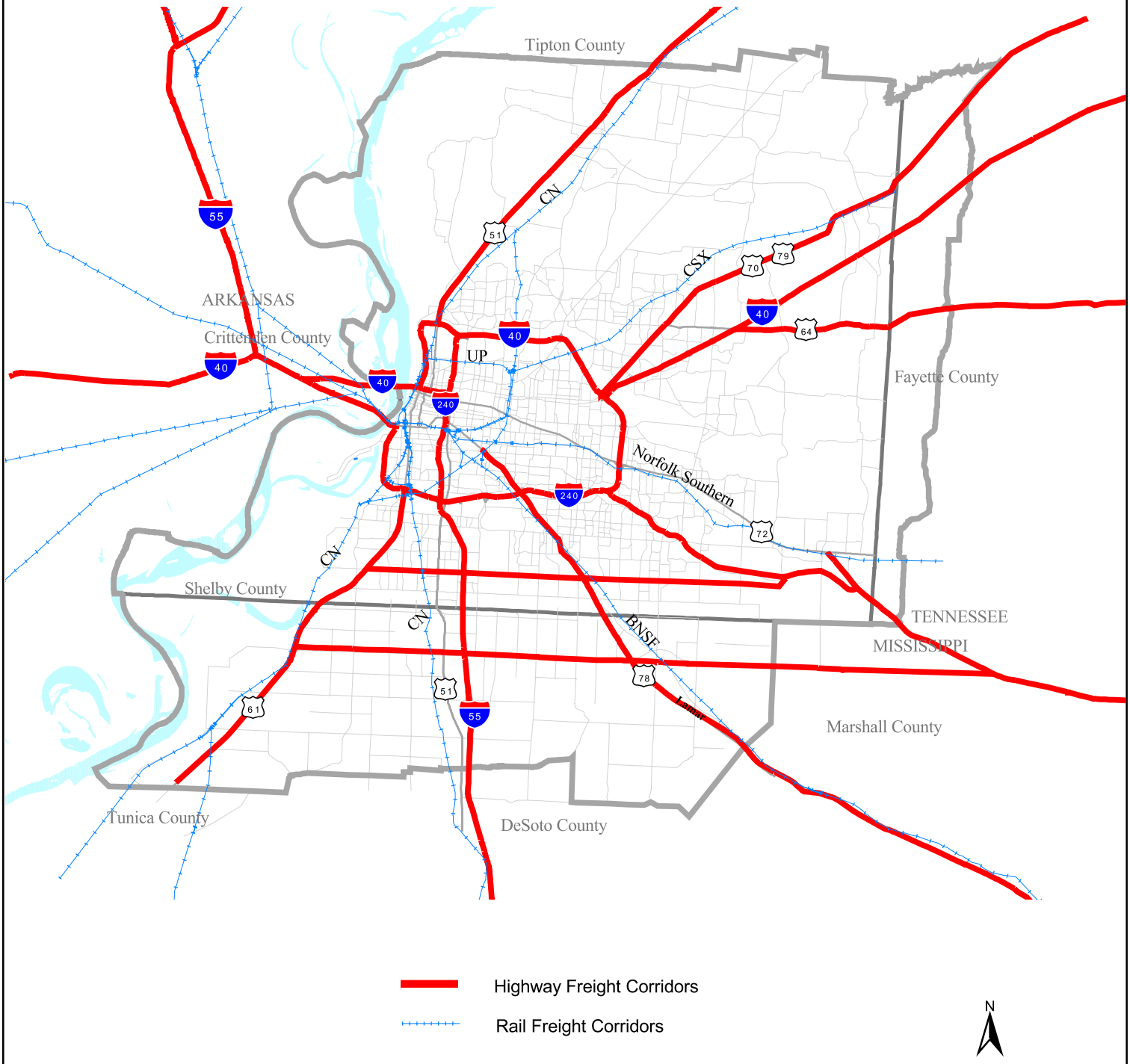
C. Existing Principal Freight Corridors

Principal freight corridors serve international and domestic interstate and intrastate trade within the freight transportation system. **Figure 21, Principal Freight Corridors,** maps the existing highway and rail freight corridors identified from the "Freight Analysis Framework" (FAF) by the Office of Freight Management, FHWA. Based on the FAF data, the principal truck freight corridors in the Memphis MPO shown in **Figure 21** include the following facilities:

- Interstate system with NHS Intermodal Connectors
- U. S. Highway 78
- U. S. Highway 51
- U. S. Highways 61, 70, and 72
- Tennessee Highway 385
- Tennessee Highway 14
- Mississippi Highways 302 (Goodman Rd.), 301, and 305
- Singleton Parkway
- Part of Paul Barrett from Singleton Parkway to U. S. Hwy 51

The freight corridor not listed above but connecting to major truck activity hubs and the interstate highway system is Shelby Drive from I-55 east to US 78 (also mapped on Figure 23). Justification for this addition is based on the Tennessee Roadway Information Management System (TRIMS) data from TDOT. This data **(See Appendix J, TRIMS Data)** illustrates roadways in the MPO area with truck traffic accounting for 10 percent or more of the average daily traffic (ADT).

Figure 21
Existing Principal Freight Corridors



Source: Freight Analysis Framework, Office of Operations, Office of Freight Management, FHWA and TDOT TRIMS Data 2003

This analysis reaffirms the FHWA designated principal freight corridors and justifies Shelby Drive for inclusion in the system. Other small segments shown in **Appendix J** are not being recommended because these segments are not located in proximity to freight hubs and/or were isolated segments.

Shelby Drive is the main east-west truck route connecting the Airport and Lamar/Hickory Hill freight activity hubs to I-55 and US 78. As indicated in the *1999-2003 Annual Reports of the Memphis and Shelby County Industrial Development Board,* based on the number of new distribution companies locating along Shelby Drive and the possibility of railroad expansions in the area, Shelby Drive could experience additional truck congestion in the future.

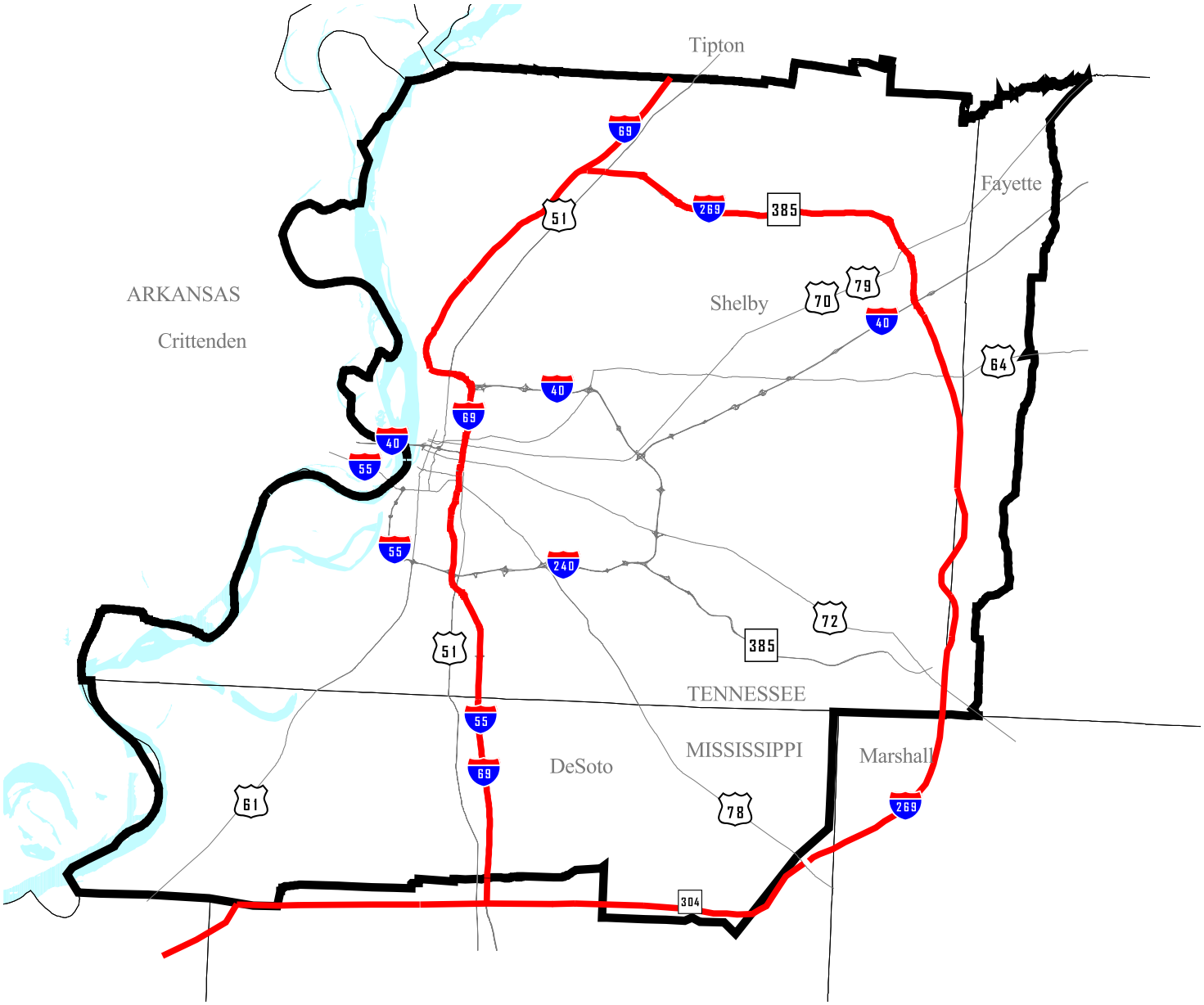
D. Future Principal Freight Corridors

Truck traffic projections from the Office of Freight Management did not include the effects that proposed Interstate 69 (I-69) and Interstate 269 (I-269) will have on freight traffic in the Memphis area (**see Figure 22, Proposed Interstate 69 and Interstate 269)** as future principal freight corridors. As described in the Interstate 69, Section of Independent Utility #9, Draft Environmental Impact Statement (DEIS), the purpose of proposed I-69 is to provide an adequate corridor for the movement of freight between Canada and Mexico, improve international and interstate trade, increase accessibility to the region and improve transportation systems linkages to stimulate economic development. Its purpose is also to respond to local traffic growth and travel demands by providing a high-speed, access-controlled facility that is responsive to traffic usage and enhances access between communities and routes within the I-69 corridor.

I-69, also known as Corridors 18 and 20, includes eight states from the Gulf of Mexico and Texas, through the Mississippi Delta, the Midwest, to the industrial north to Canada. The national I-69 Corridor was designated by Congress in the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) to address the transportation needs associated with growing trade opportunities beyond the U. S. borders. In support of the enactment of the North American Free Trade Agreement of 1992 (NAFTA), the Transportation Equity Act for the 21st Century (TEA 21), signed into law June 9, 1998, designated the I-69 Corridor.

The DEIS points out that studies of the movement of commodities, both finished goods and raw materials, show there is significant demand for this movement to occur along a route within the designated I-69 Corridor. With an increasingly global economy and evolving international trade opportunities, direct and continuous connections from Canada and Mexico play a key role in the health of the United States economy. I-69 will give the nation new capacity to efficiently ship commodities from border to border, significantly reducing travel times and cost. Memphis is one of the "named cities" in the federal legislation to be connected to the new I-69 facility due to its importance as one of the top ten distributions centers in the United States. I-69 will offer much needed economic opportunities for West Tennessee, Eastern Arkansas and Northern Mississippi.

Figure 22
Proposed Interstate 69 and Interstate 269



A systems approach alternative was evaluated in the I-69 DEIS. This approach connects existing and proposed interstates and other existing and proposed major highways identified in the Memphis LRTP and Mississippi's Vision 21 Plan (MS State Transportation Plan) to a roadway system that carries out the stated I-69 goals. The impact of I-69 on the Memphis MPO 2026 Roadway Network is further described in **Chapter 5.**

The systems approach alternative involves construction of a route through Memphis (I-69), as well as the construction of an eastern bypass route (I-269). The Memphis LRTP 2026 supports the eastern loop because it will respond to congestion issues on I-69 (See CMS section) and it will provide additional regional transportation access to the smaller cities and municipalities around Memphis. It also connects to key U. S. highways that carry large truck volumes (i.e., US 78, US 72, US 64 and US 51). US 78, which approaches Memphis from the southeast, is proposed to be upgraded to interstate standards and designated as part of the Interstate System. This will provide a new interstate connection for freight movement from Memphis to Birmingham, Alabama, further supporting the freight activity hubs and principal freight corridors previously described in this section.

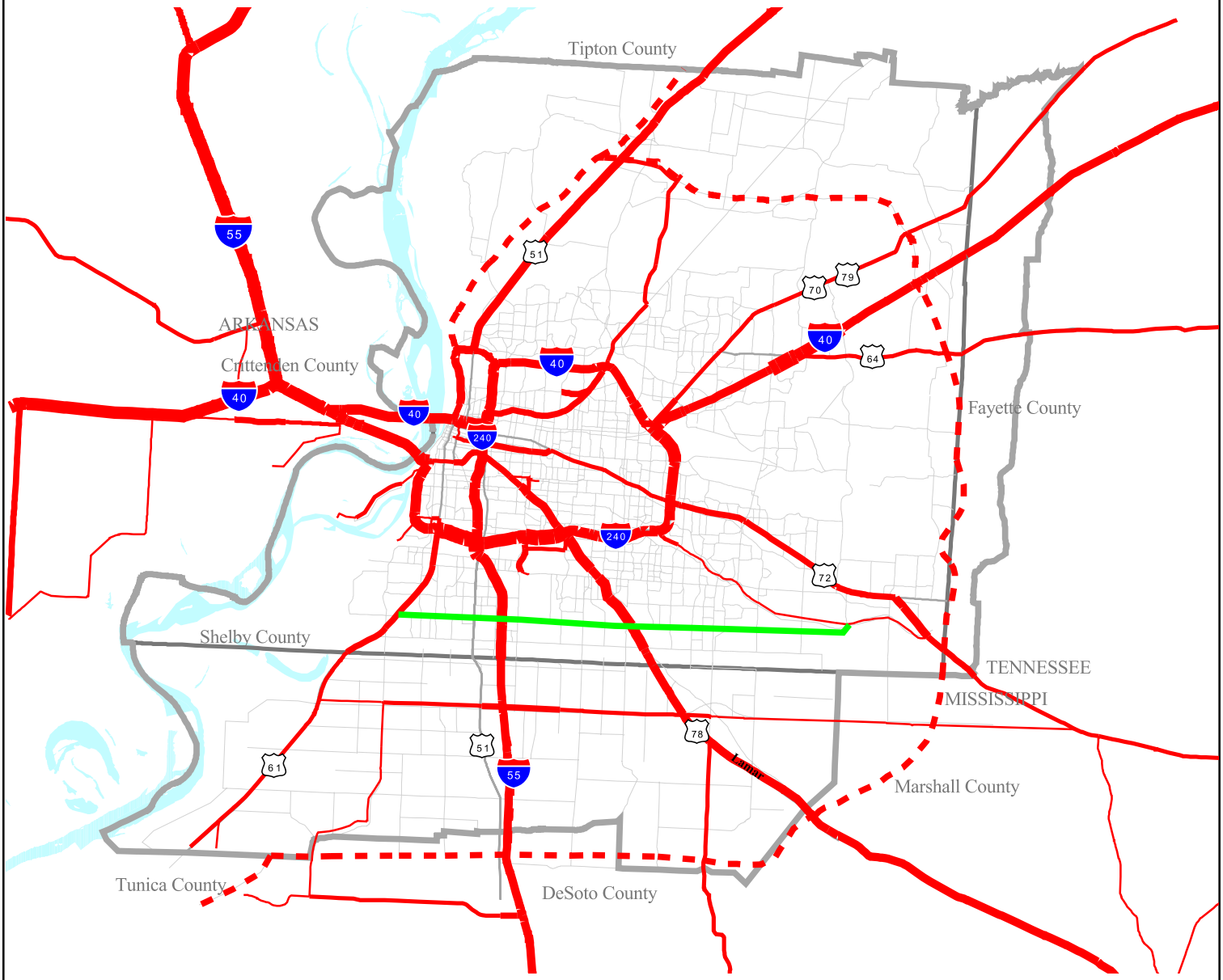
The movement of people and freight will be greatly enhanced by the freight distribution network created from the construction of both I-69 and I-269. The construction of these new facilities could result in the expansion or creation of freight activity hubs and principal freight corridors that will further support the growing trucking and distribution industries in the Memphis MPO region.

E. Truck Freight Congestion

Memphis MPO staff utilized Office of Freight Management base data for 1998 truck traffic and projections for 2020 for NHS corridors in the Memphis MPO area. As described earlier, **Figure 21,** maps the existing highway and rail freight corridors identified from the *Freight Analysis Framework* (FAF). **Figure 23, Future Principal Freight Corridors, Truck Volumes Traffic 2020,** shows growth in truck traffic in these principal freight corridors as projected in the FAF for 2020.

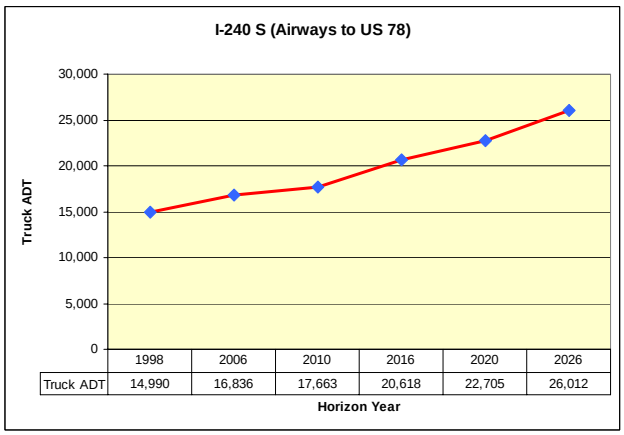
Traffic volume increases in principal freight corridors were projected for the LRTP horizon years 2006, 2016, and 2026. (The methodology and table appear in **Appendix K, Truck Volume Methodology.** Additionally, TRIMS data helped MPO staff identify roadways in the MPO area with truck traffic accounting for 10 percent or more of the ADT. **Figure 24, Projected Truck Traffic,** indicates that truck trips of the total ADT on I-55, I-240 South, and U. S. 78 will nearly double from 1998 to 2026. While it is projected that all forms of traffic will increase in that time period, truck traffic will increase at a much faster rate than automobiles.

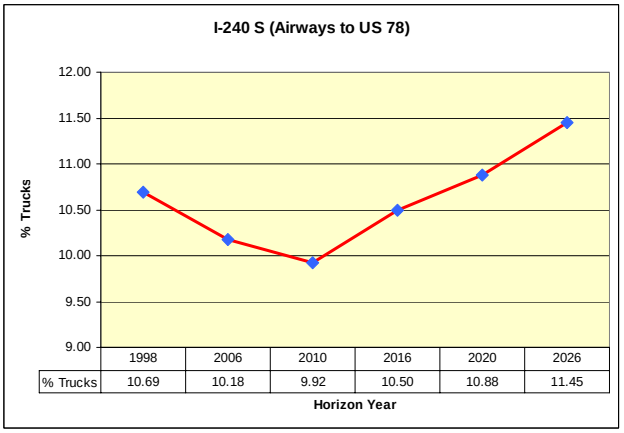
Figure 23
Future Principal Freight Corridors, Truck Volumes 2020

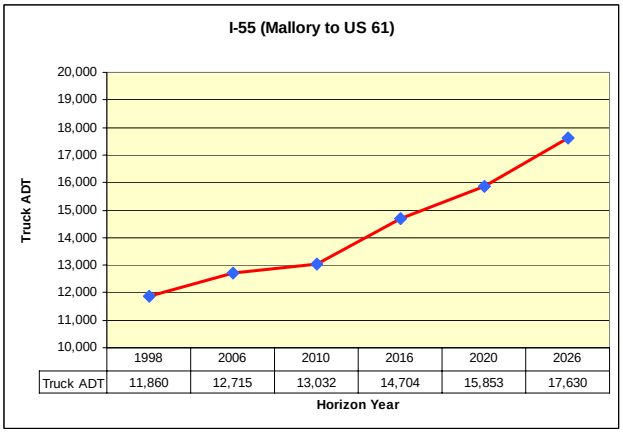


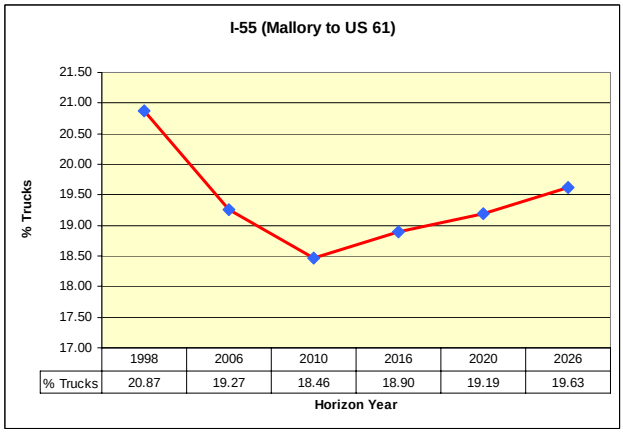
Source: Freight Analysis Framework, Office of Operations, Office of Freight Management, FHWA

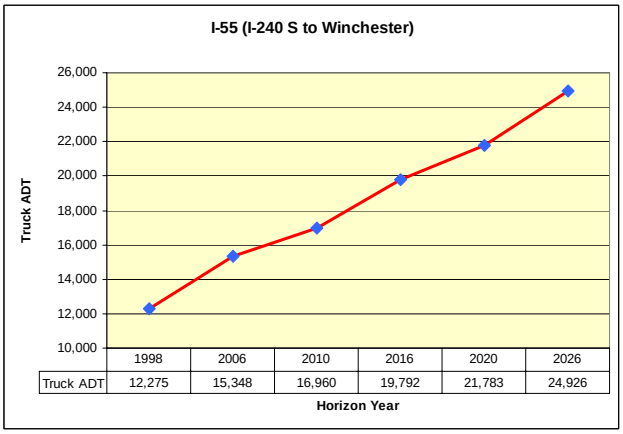
Figure 24 **Projected Truck Traffic**

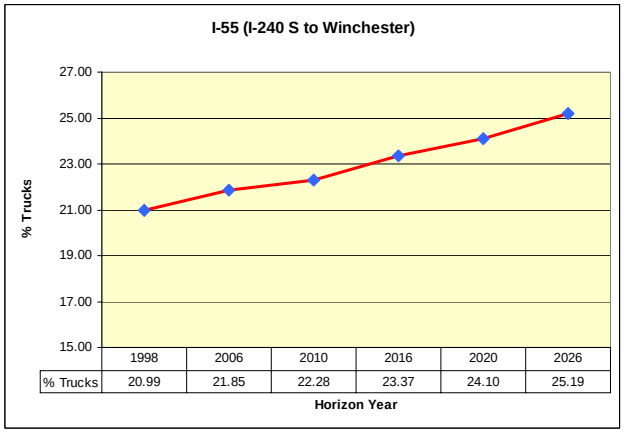


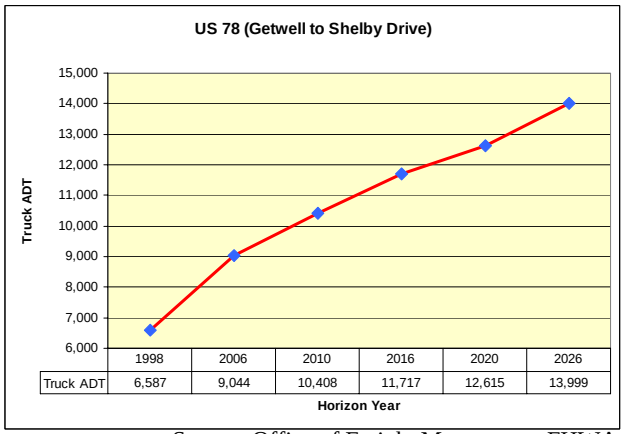


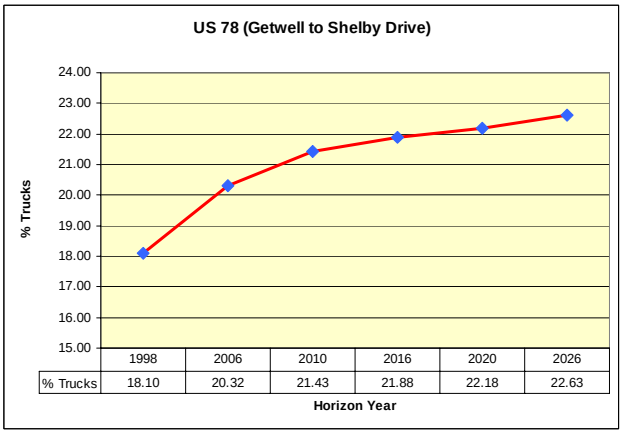












Source: Office of Freight Mangement, FHWA, FAF Data & Department of Regional Services

F. Roadway Projects to Address Freight Congestion Issues

Principal freight corridors with truck volumes of 10% or more of the ADT are shown in **Figure 25, Congestion Caused by Freight Movement,** and are considered to be major contributors to congestion in the Memphis MPO. Based on analysis of these corridors and recommendations of projects in the CMS section, congestion relief will be provided to these corridors.

The following projects that are included in the CMS section and/or the 2026 Roadway Network (**Figure 26, Planned Road Projects That Help to Relieve Truck Congestion**) show that major improvements are being recommended to address congestion on the principal freight corridors. These projects are listed in two parts: 1) CMS/2026 Roadway Network projects with direct impact on congestion relief; and 2) Other 2026 Roadway Network projects with indirect impact on congestion relief. Information regarding these projects can also be found in the Financial section (Chapter/Appendix 8/N).

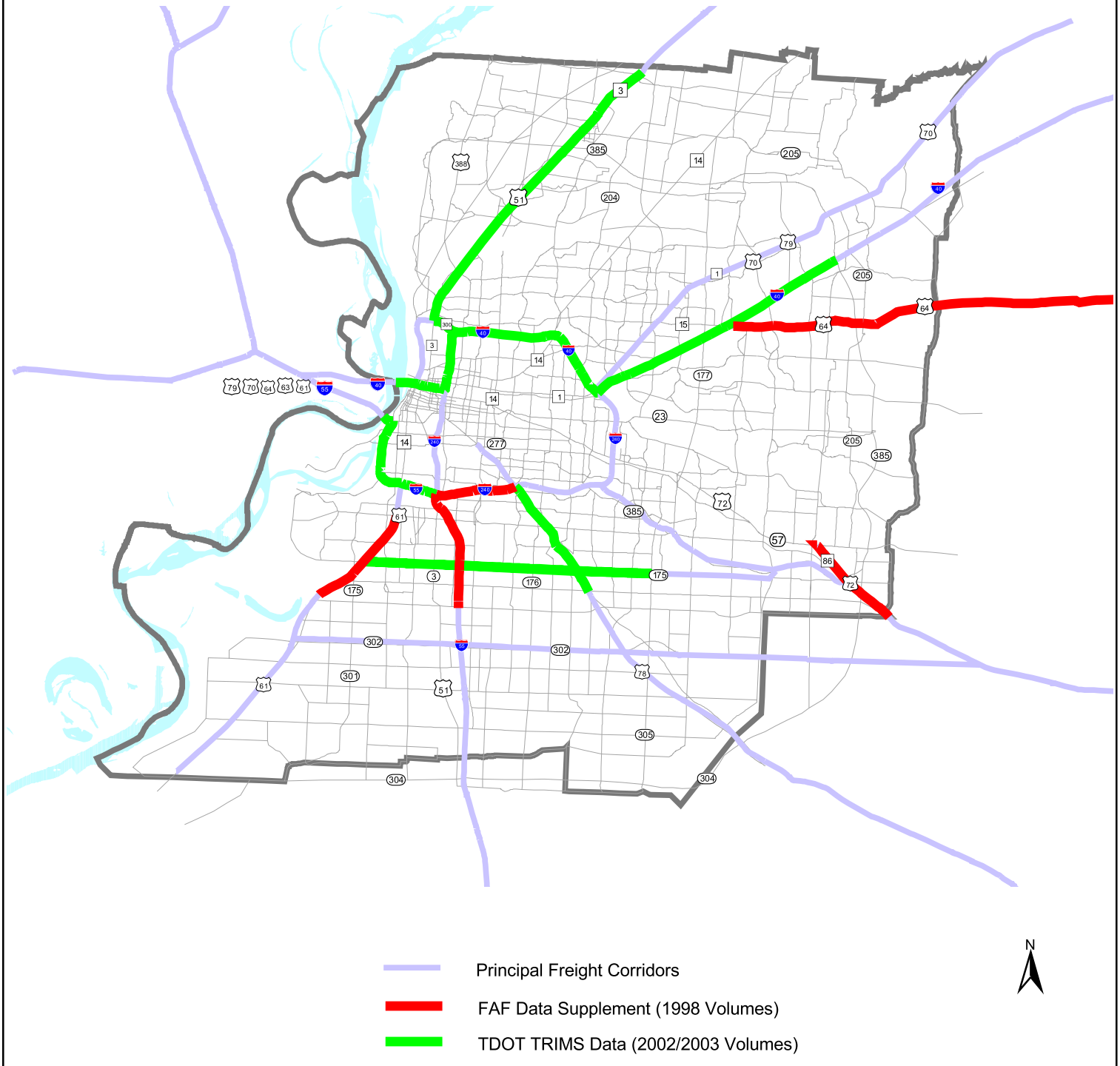
CMS/2026 Roadway Network projects with direct impact on congestion relief:

- Widen I-240 South from I-55 to U.S. 78 and reconstruct the Airways Boulevard interchange
- Widen U.S. 78 from Getwell Road to the Tennessee-Mississippi state line with the construction of new interchanges and Shelby Drive, Holmes Road, and Stateline Road
- Reconstruct the I-55 Crump Boulevard interchange
- Extend South Parkway West to Jack Carley Causeway on Presidents Island
- Reconstruct the I-55 and Mallory Avenue interchange
- Extend Shelby Drive and widen Shelby Drive near Pidgeon Industrial Park
- Widen I-55 in DeSoto County
- Widen Goodman Road in DeSoto County (MS-302)

Other 2026 Roadway Network projects with indirect impact on congestion relief:

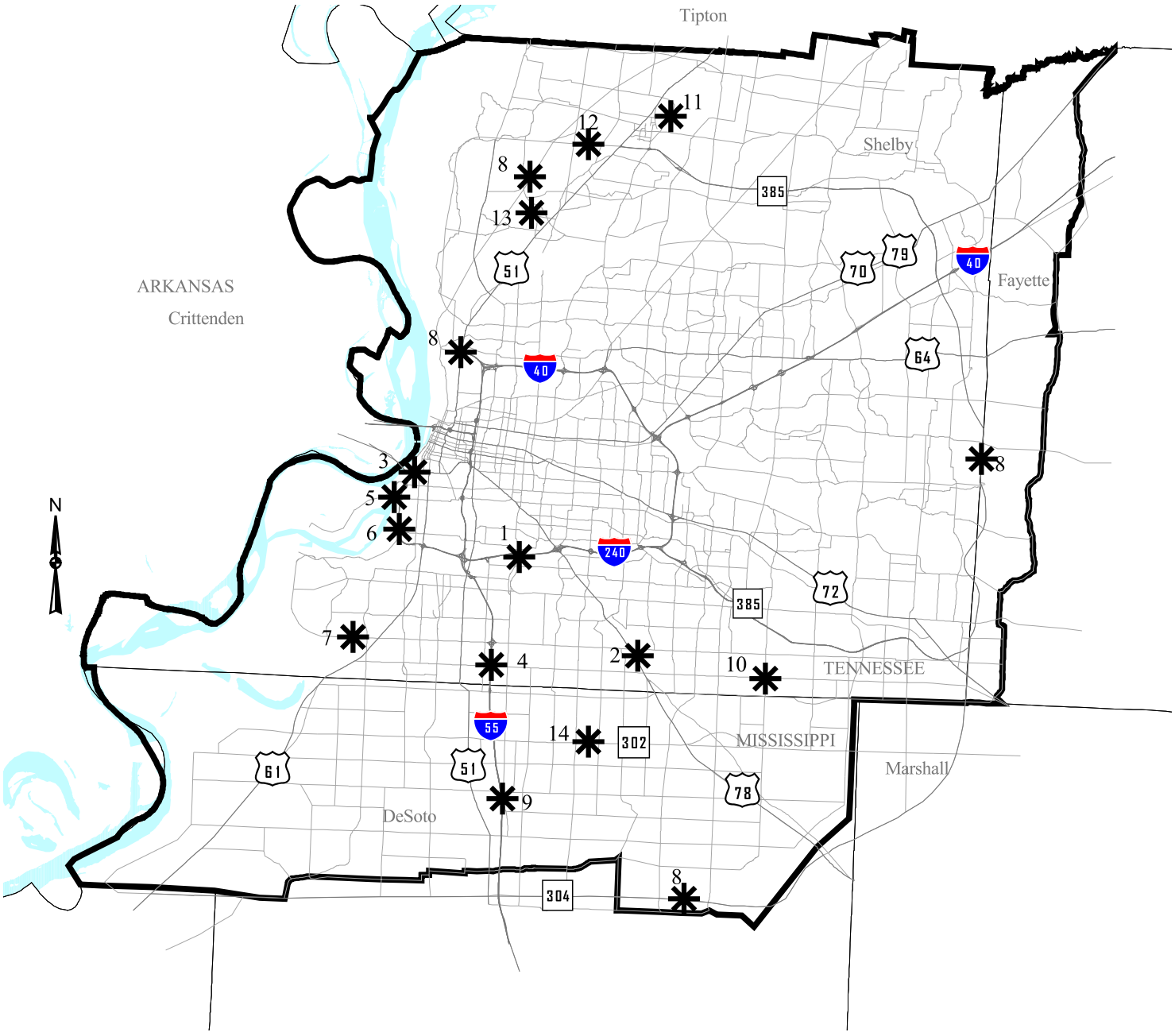
- Widen Holmes Road from U.S. 78 to I-55 with a new interchange constructed at I-55
- Construct I-69 and I-269 through the MPO area
- Widen Hacks Cross Road from the Tennessee Mississippi state line to Shelby Drive
- Construct West Union Road Extended in Millington
- Extend Paul W. Barrett Parkway to future I-69
- Extend and widen Fite Road to future I-69.

Figure 25
Congestion Caused by Freight Movement
(Truck Volumes with more than 10% of ADT)



Source: FAF Network, Office of Freight Management, FHWA, TDOT TRIMS Data (2002/2003)

Figure 26
Planned Road Projects That Help Relieve Truck Congestion



1. Widening I-240 South from I-55 to U.S. 78 and reconstructing the Airways Blvd interchange
2. Widening U.S. 78 from Getwell Rd to the TN-MS state line with the construction of new interchanges at Shelby Drive, Holmes Rd, and Stateline Rd
3. Reconstructing the I-55 - Crump Blvd interchange
4. Widening Holmes Road from U.S. 78 to I-55 with a new interchange constructed at I-55
5. Extending South Parkway West to Jack Carley Causeway on Presidents Island
6. Reconstructing the I-55 and Mallory Avenue interchange
7. Extending Shelby Drive and widening Shelby Drive near Pidgeon Industrial Park
8. Constructing I-69 and I-269 through the MPO area
9. Widening I-55 in DeSoto County
10. Widening Hacks Cross Road from the Tennessee-Mississippi state line to Shelby Drive
11. Constructing West Union Road Extended in Millington
12. Extending Paul W. Barret Parkway to future I-69
13. Extending and widening Fite Road to future I-69
14. Widening Goodman Road in DeSoto County

County Boundary
MPO Boundary

G. Future direction

This section provided a detailed discussion on the truck freight industry and its importance to the Memphis MPO region. The projects being recommended to support truck freight movement are important but they are one part of the overall freight plan. A freight module in the proposed new Travel Demand Forecasting Model will provide better system-wide traffic flow data and more accurate traffic projections for freight movement in future years. The ever-expanding distribution industry in the Memphis area will benefit from these activities thereby helping to stimulate economic growth for the entire region.

LRTP 2026 PROJECTS/STRATEGIES

All of the projects in the plan that involve freight movement and traffic congestion impact efficient truck movement. The most significant projects in the LRTP 2026 that support the truck transportation element were previously outlined on page 98 and in Figure 26.

SUPPORT OF LRTP 2026 GOALS

While supporting all of the goals of the LRTP 2026, the truck transportation element of the transportation system specifically addresses the following goals and objectives:

• Promote efficient land use and development patterns to ensure safety, economic vitality, and to meet existing and future transportation needs.

- Promote the concentration of future employment and other activity centers along existing and planned major travel corridors.

• Encourage conservation of energy resources in addition to minimizing the adverse impacts transportation has on social, economical and environmental attributes of the community.

- Minimize transportation noise impacts.

• Increase the safety and security of the transportation system for motorized and non-motorized users.

- Encourage policies, plans and transportation projects that eliminate unsafe designs and conditions or provide increased safety for users.

• Continue to develop a multi-modal transportation network that utilizes strategies for addressing congestion management and air quality issues in the Memphis MPO region.

- Promote street networks that ensure minimal congestion by reducing travel delays in accordance with the guidelines in the adopted CMS Plan.

- **Encourage improvements to and the expansion of freight facilities to ensure that Memphis maintains its leading role in global logistics.**
  - **Work with regional Class I railroads to ensure that the Memphis Intermodal Terminal is developed and operating by 2006.**
  - **Work with federal and state departments of transportation to obtain funding for the construction of I-69, I-22, and the new I-55 highway-railway bridge.**

5. Intermodal Facilities

The location of the Memphis region has historically made it an important center of transportation and logistics resources. Growth trends in aviation, rail, port facilities, and truck modes have been documented previously in this Freight section. Project recommendations for the various freight modes, included in the 2026 LRTP, will also benefit intermodal facilities. The Memphis MPO is working to more effectively integrate all of these transportation modes into an intermodal system for the efficient movement of goods and services.

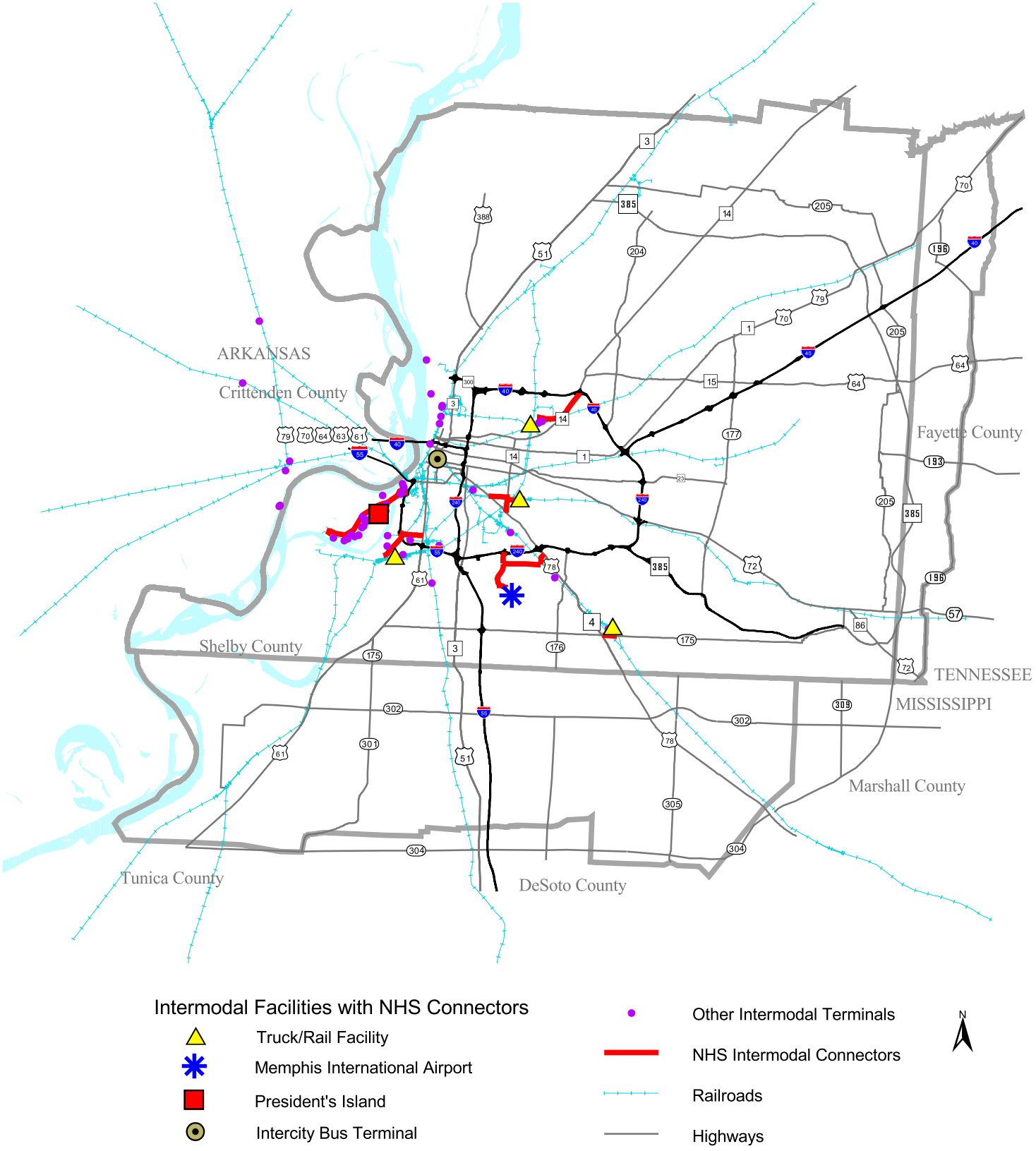
A. Existing Intermodal Transfer Facilities

The Memphis MPO identified existing public and private intermodal terminals in the planning area. **Figure 27, Existing Intermodal Facilities and NHS Connectors,** maps these intermodal facilities that also include truck and rail terminals, Memphis International Airport, the International Port of Memphis and the highway network. National Highway System (NHS) Intermodal connectors are also mapped in **Figure 27** and were utilized to further document the NHS intermodal facilities in the Memphis MPO area. These intermodal facilities with their accompanying NHS Connectors are shown in **Table 13** below.

TABLE 13
MEMPHIS MPO INTERMODAL FACILITIES AND NHS INTERMODAL CONNECTORS

NAME	TYPE	NHS Connector*
Greyhound	Intercity Bus Terminal	Union Ave (SR-3) between Danny Thomas (SR-1) and 4th Street
Tennessee Yards	Truck/Rail Facility	Shelby Drive between Lamar Ave (SR-4) and the Tennessee Yard
Johnston Yards	Truck/Rail Facility	Mallory Ave and Riverport Road between I-55 and Rail Yard
Forrest Yards	Truck/Rail Facility	Southern Ave between Lamar Ave (SR-4) and East Parkway (SR-277); East Parkway between Lamar Ave (SR-4) and Southern Ave; Spottswood Ave between Airways and Forrest Yard
Leewood Yards	Truck/Rail Facility	Jackson Ave (SR-14) and Chelsea Avenue between I-40 and Warford Street
President's Island	Port Terminal	McLemore Ave, Riverside Blvd, Jack Carley Causeway, Harbor Ave, and Jetty Street between I-55 and Port
Memphis International Airport	Airport	Tchulahoma and Democrat Road between Lamar Ave (SR-4) and Airways Blvd; Plough Blvd between I-240 and Airport Entrance
* Source: Official NHS Intermodal Connector Listing, FHWA		
** Source: FAF Network, Office of Freight Management, FHWA		

Figure 27
Existing Intermodal Facilities and NHS Connectors



Source: International Port of Memphis and Memphis MPO

B. Intermodal Issues

Increased demand for more capacity in all of the transportation modes described earlier in this section (aviation, rail, port facilities, truck) point to the growing need for new and expanded facilities. A closer look at **Figure 27** illustrates how most of the existing facilities are located in a very small geographic area in the inner city of Memphis. Freight bottlenecks near the port and rail yards can affect traffic and freight movement. Air quality can become a problem when idling vehicles are stopped at railroad grade crossings for long periods of time. Truck and rail traffic in neighborhoods are another area of concern (see Truck Freight Section). The CMS Section of the 2026 LRTP also describes congestion associated with the road network that serves many of the existing intermodal facilities. Such congestion can impede national and international freight movement.

The Light Rail Development alternative is being proposed by the Memphis MPO to reduce congestion problems caused by automobile traffic and to encourage people to take light rail rather than increase vehicular traffic on the road network. While the impact of the Light Rail alternative is not projected to have a dramatic impact on freight movement, any congestion relief it provides will benefit the trucking and distribution industry using the road network. The Light Rail Development alternative will also not have a great impact on railroad facilities because the potential corridors of the light rail system will not be on freight lines.

C. Future Intermodal Facilities

Efforts to address congestion issues in and around airport, port, rail and truck terminal facilities have been made by the Memphis MPO and a variety of public and private groups in the area. The following facilities are planned improvements to the intermodal network to respond to congestion issues as well as to improve the distribution capabilities of the Memphis MPO region.

Interstate 69/269 (I-69)

I-69 will be a new principal freight corridor which will provide both the Memphis region and the nation with new capacity to efficiently ship commodities from Canada to Mexico while reducing travel times and cost. It will also offer much needed economic opportunities for West Tennessee and Northern Mississippi. The construction of an eastern bypass route (I-269) will provide additional regional transportation access to the smaller cities and municipalities around Memphis. It also connects to key U. S. highways that carry large truck volumes (i.e., US 78, US 72, US 64 and US 51). US 78, which approaches Memphis from the southeast, is proposed to be upgraded to interstate standards and designated as part of the Interstate System. This will provide a new interstate connection for freight movement from Memphis to Birmingham, Alabama.

Memphis Intermodal Terminal (Figure 28, Future Intermodal Facilities and NHS Connectors)

Feasibility studies on the Memphis Intermodal Terminal show there is a great need to increase capacity in the region's ability to handle freight. Agreements between the rail companies and local government are in place to develop the Memphis Intermodal Terminal at Frank C. Pidgeon Industrial Park in southwestern Memphis. The new terminal will be a state-of-the-art intermodal facility on 3,000 acres that will facilitate the transfer of cargo between rail lines in one location. These rail-to-rail transfers will eliminate existing trucking drayage between railroad yards and significantly lessen the number of trucks traveling through residential areas. This is not a project of the LRTP 2026, but the connector system to the terminal is a major part of this plan. The intermodal terminal is a project of the private sector.

Shelby Drive from I-55 to Pidgeon Industrial Park--NHS Intermodal Connector (Figure 28)

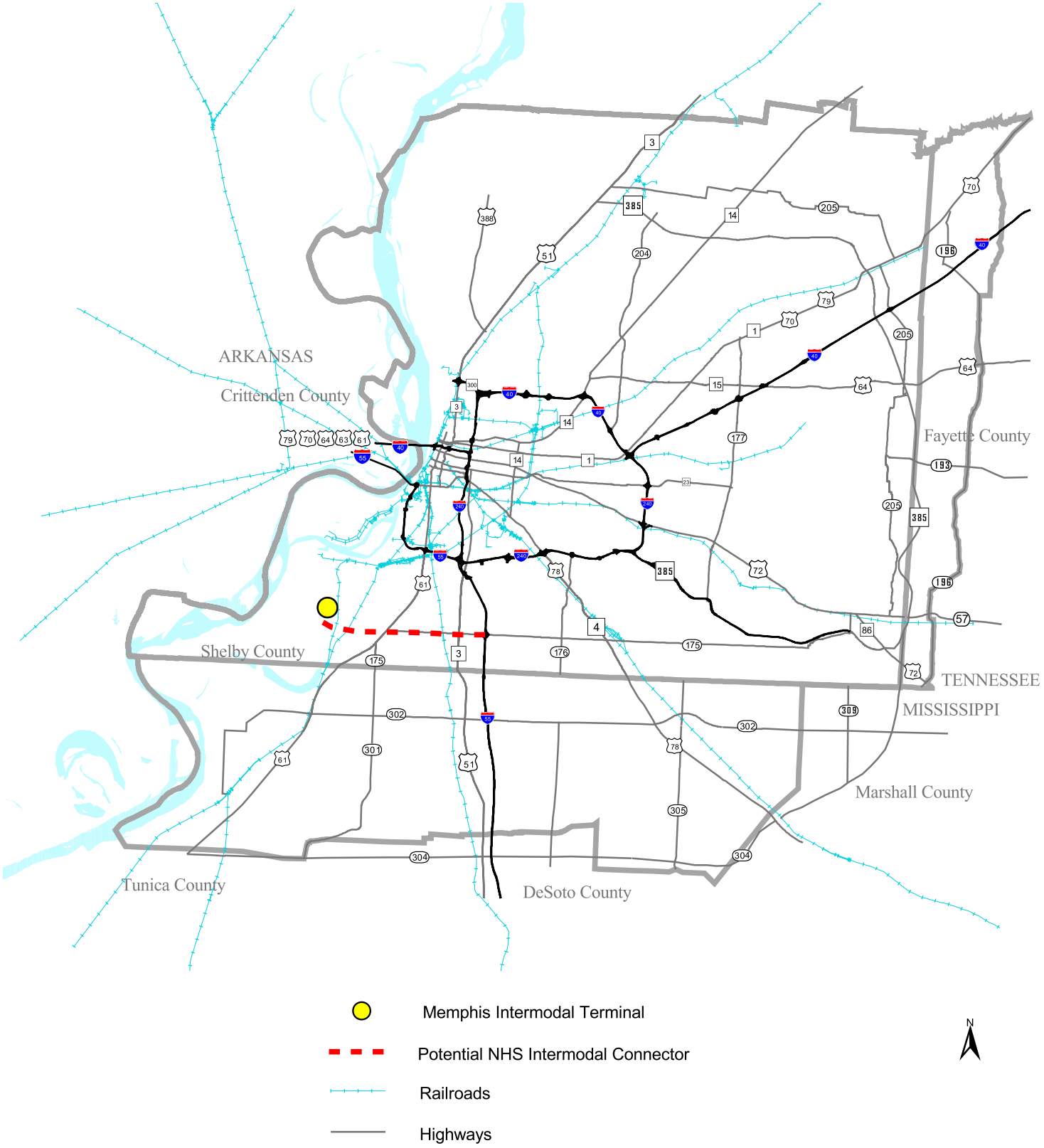
The Memphis MPO has identified Shelby Drive from I-55 to Pidgeon Industrial Park as a road segment that will require designation as an NHS Intermodal Connector to provide access to the new Memphis Intermodal Terminal. This recommended designation is based on the guidelines from FHWA and U. S. DOT. The new NHS Intermodal Connector will link to the principal freight corridor (identified in the Truck Freight section of this chapter) that extends from I-55 east to US 78.

Third Bridge

A combined highway-railway bridge with multiple tracks has been recommended to replace two railroad bridges spanning the Mississippi River on I-55. The bridge is shown as an "illustrative project" in the LRTP 2026. The new facility would increase interstate capacity with convenient interstate and railway access to the proposed Memphis Intermodal Terminal in Pidgeon Industrial Park. Congress has authorized feasibility and location studies for this facility and the MPO is working with Arkansas, Mississippi and Tennessee in developing these studies.

Efforts to provide new and expanded intermodal facilities by the Memphis MPO are being recommended to improve freight transportation capabilities. Expected outcomes from these improvements will be to lower transportation costs for the movement of goods, enhancement to productivity and competitiveness for Memphis area businesses, improved air quality and environmental conditions through reductions in energy consumption and traffic congestion, and new employment opportunities.

Figure 28
Future Intermodal Facilities and Potential NHS Connectors



Source: International Port of Memphis and Memphis MPO

LRTP 2026 Projects/Strategies

All of the projects in the plan that involve freight movement and traffic congestion impact intermodal facilities. However, the most significant projects in the LRTP 2026 that support the intermodal element include:

- Interstate 69/Interstate 269
- Shelby Drive from I-55 to Pidgeon Industrial Park--NHS Intermodal Connector
- Third Bridge over the Mississippi

SUPPORT OF LRTP 2026 GOALS

While supporting all of the goals of the LRTP 2026, the intermodal facilities element of the transportation system specifically addresses the following goals and objectives:

• Promote efficient land use and development patterns to ensure safety, economic vitality, and to meet existing and future transportation needs.

- Promote the concentration of future employment and other activity centers along existing and planned major travel corridors.
- Continue to modernize rail signals to lessen rail-auto conflicts
- Continue to erect (where feasible) signs that limit truck traffic on small residential streets

• Encourage conservation of energy resources in addition to minimizing the adverse impacts transportation has on social, economical and environmental attributes of the community.

- Minimize transportation noise impacts.

• Increase the safety and security of the transportation system for motorized and non-motorized users.

- Encourage policies, plans and transportation projects that eliminate unsafe designs and conditions or provide increased safety for users.

• Continue to develop a multi-modal transportation network that utilizes strategies for addressing congestion management and air quality issues in the Memphis MPO region.

- Promote street networks that ensure minimal congestion by reducing travel delays in accordance with the guidelines in the MPO's adopted CMS Plan.

• Encourage improvements to and the expansion of freight facilities to ensure that Memphis maintains its leading role in global logistics.

- Work with regional Class I railroads to ensure that the Memphis Intermodal Terminal is developed and operating by 2006.

- **Work with the MSCAA and IPM to obtain funding for projects designated in their master plans**
- **Work with federal and state departments of transportation to obtain funding for the construction of I-69, I-22, and the new I-55 highway-railway bridge.**

D. MAJOR ROADS

The major road element of the Memphis MPO LRTP defines the needs of the Memphis region for federal/state highways and regional/local arterials that provide key interconnection to the broader regional network.

The major roads in the recommended 2026 network for the MPO region include roads that will be improved and construction of new roads. These roads accommodate travel demand created by the chosen alternative - Light Rail Corridor Development. Those agencies include the states of Mississippi and Tennessee for National Highway System Roads, other U.S Highways, and state highways. The MPO coordinates projects that are recommended for federal funding through the MPO allocation of Surface Transportation Project (STP) and Congestion Mitigation and Air Quality (CMAQ) funds. The major road network projects are listed in **Appendix M** by county, and are programmed for funding through local tax revenues, bonds and development policies of the various jurisdictions and counties.

Financing for the recommended road projects is provided in **Chapter 7** of this plan. The financial analysis shows the MPO, through its member organizations, has sufficient financial resources to provide the recommended road network of this plan. The plan is financially constrained.

1. Road Network Development

The recommended road network of the Memphis region consists of interstate highways, federal and state highways, and local arterials. The efficient operation of the network requires the connectivity of these road types, effective congestion management and.

The base network was evaluated in the Memphis MPO Travel Demand Model with the assumptions of the two growth alternatives outlined in Chapter 4. Analysis of the Travel Demand Model indicates no significant differences on the regional network need between the two development alternatives because the land use and demographics are the same in the two scenarios until the light rail becomes fully operational.

Table 14, Travel Demand Model Comparison Of Growth Alternatives: 2026 shows the total vehicle miles traveled (VMT) and total vehicle hours traveled (VHT) in each alternative. The Suburban Expansion Alternative actually resulted in lower VMT and VHT than the Light Rail Development alternative. Analysis shows that the lower VMT/VHT occurs due to the spread of population to areas which are currently rural and are beyond the MPO planning area.

The difference of 0.53% in VMT and 0.34% in VHT between the two alternatives is not significant and did not impact the regional network needs or air quality conformity issues.

TABLE 14
TRAVEL DEMAND MODEL COMPARISON OF GROWTH ALTERNATIVES
2026

Growth Alternative	Total Travel Time (Hours)	Total Vehicular Miles
Light Rail	51,566,405	34,861,941
Suburban Expansion	51,294,908	34,742,262
Percent Difference	0.5293	0.3445

Criteria for Evaluation of Major Road Network

The network was evaluated based on four major criteria to meet the needs of the MPO area:

1. The need for congestion management strategies to resolve existing and future congestion.
2. Road projects needed to support of the freight and logistics industry
3. Road projects needed to support the projected growth of population and employment.
4. Road projects needed to provide connections to the regional system of interstates and U.S Highways.

1. The need for congestion management strategies to resolve existing and future congestion

The road network incorporates all of the recommendations from the CMS evaluation. The application of local CMS strategies provided relief to most of the existing identified congested corridors. However, some corridors require either addition of new general purpose lanes or reconstruction and design of existing interchanges by the horizon year 2026 to relieve congestion. The CMS strategies will continue to be applied throughout the planning period in a continued effort to address congestion issues before recommended construction of general purpose lanes occurs.

Below is a list of the 2004 congested network general purpose lane improvement projects that have been incorporated into the recommended 2026 Road Network. Detailed analysis of CMS strategies and recommendations can be found in Chapter 6.

- Bill Morris Pkwy (SR 385): I-240 to Riverdale
- Byhalia: Winchester to Poplar
- Covington Pike: Macon to Stage
- Germantown (HWY 305): Stateline to US 78
- Hollywood: Sam Cooper to Jackson

- HWY 61: Church to Nail
- I-240: Bill Morris Pkwy (SR 385) to I-40 E
- I-240: I-55 to Airways
- I-240: Airways to Lamar
- I-55: HWY 304 to Goodman
- I-55: Goodman to Stateline
- Interchange: Perkins & Winchester
- Interchange: US 64 & I-40
- McLean: Poplar to North Parkway
- Plough Blvd: I-240 to Airways
- Summer: I-40 to Elmore
- US 51: Paul Barret Pkwy (SR 385) to West Union

2. Road projects needed to support of the freight and logistics industry

The Freight section of this Chapter evaluates the needs and recommends road projects to support the needs of aviation, intermodal, rail, truck and port facilities. Major freight corridors were identified in the freight analysis. Truck freight movement that contributes congestion to the network was analyzed. The corridors which exhibited an LOS of E or F which require improvement were identified in the CMS section.

Below is a list of road improvement projects that were incorporated into the recommended 2026 Road Network to support freight movement.

- Widen I-240 S from I-55 to U.S. 78 & reconstruct Airways Blvd interchange
- Widen U.S. 78 from Getwell Rd to the TN-MS state line & new interchanges at Shelby Dr, Holmes Rd, & Stateline Rd
- Reconstruct I-55/Crump Boulevard interchange
- Extend S Parkway West to Jack Carley Causeway on Presidents Island
- Reconstruct the I-55 and Mallory Avenue interchange
- Extend Shelby Drive and widen Shelby Drive near Pidgeon Industrial Park
- Widen I-55 in DeSoto County
- Widen Goodman Road in DeSoto County (MS-302)
- Widen Holmes Road from U.S. 78 to I-55; a new interchange constructed at I-55
- Construct I-69 and I-269 through the MPO area
- Widen Hacks Cross Road from the Tennessee Mississippi state line to Shelby Dr
- Construct West Union Road Extended in Millington
- Extend Paul W. Barret Parkway to future I-69
- Extend and widen Fite Road to future I-69.

3. Road projects needed to support the projected growth of population and employment

The network improvements support the areas of the region where population and employment have been forecasted to increase substantially from the 2000 Census data to

the 2026 horizon year **(See Figures 29 and 30). Figure 29** shows planned network improvements through the year 2026 overlaid on projected employment growth. The data shows that the largest increases in employment are expected to occur in the eastern, southeastern and northern sectors of Shelby County; the TAZs in Fayette County; and, almost all of the planning area in DeSoto County. The planned road improvements provide access and mobility to these employment areas.

Population is expected to increase appreciably the eastern and southeastern areas of Shelby County and all of DeSoto County and Fayette County within the MPO region. Planned road network improvements will provide needed access to support the growing population**. Figure 30** shows planned network improvements in 2026 and the expected growth in population. (For more detail on demographics and employment, see Chapter 4.)

4. Road projects needed to provide connections to the regional system of interstates and U.S Highways

Figure 31 illustrates highways and arterials designated as State and Federal highways. Construction and maintenance of these roads are generally considered the responsibility of the States of Mississippi and Tennessee. These roads provide the basic infrastructure of the regional network. They include National Highway System roads (NHS) such as the interstates, NHS Intermodal Connectors, other U.S. highways, and primary and secondary State highways. Improvement projects to these roads are programmed and funded with various Federal sources including National Highway System Funds, National Corridor Planning and Development funds, and Interstate Maintenance funds and the respective state Discretionary Surface Transportation Program funds.

Regional Arterials provide key interconnections between the local arterial network and the regional framework of State and Federal highways. A number of these roads traverse significant portions of the MPO area and cross county and state boundaries. Because of the significance of these roads in this regional framework, many segments that require improvement over the life of this plan have been programmed for at least partial funding by local Surface Transportation Program (STP) funds.

Figure 29
Road Improvements Overlaid on Employment Growth

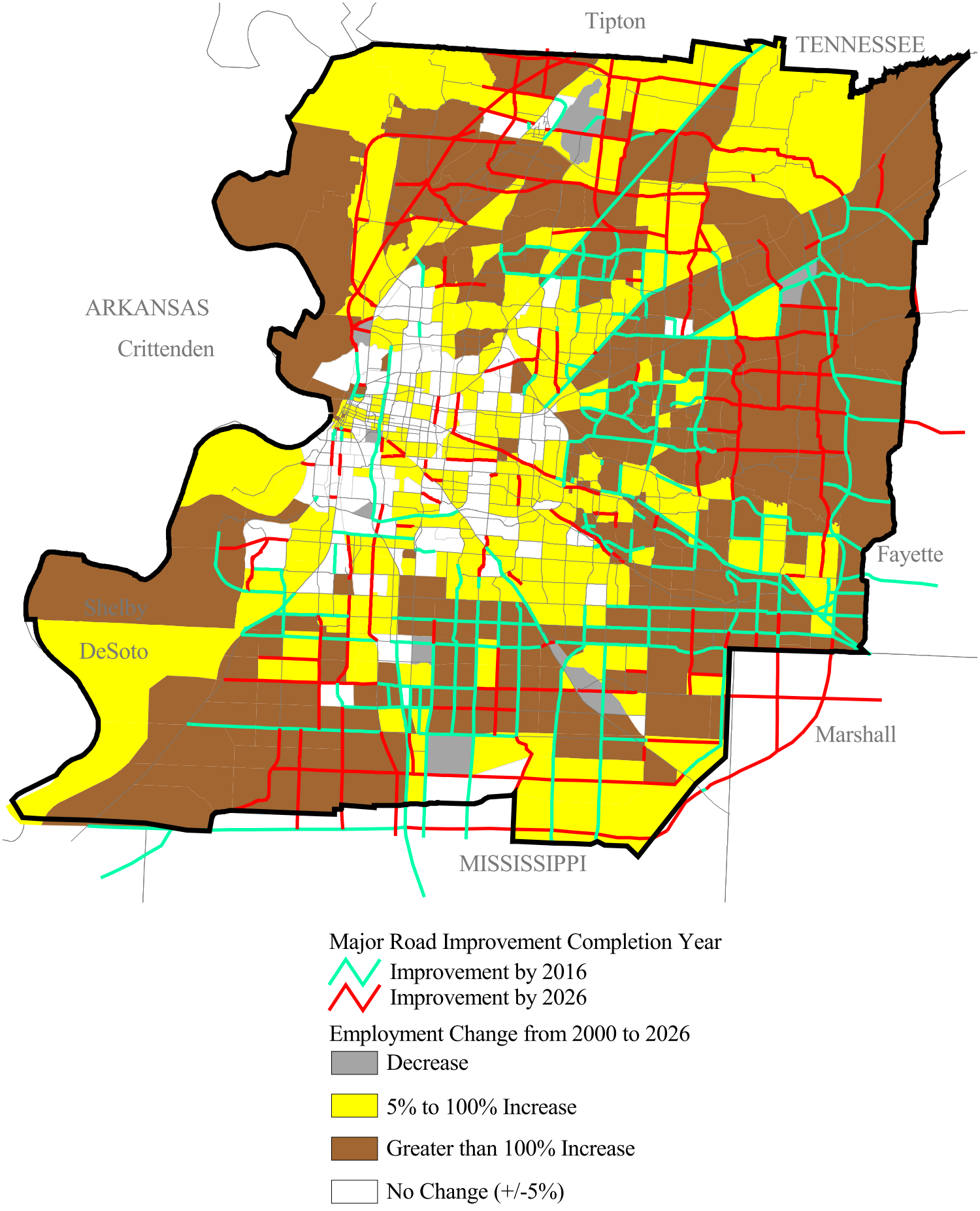


Figure 30
Road Improvements Overlaid on Population Growth

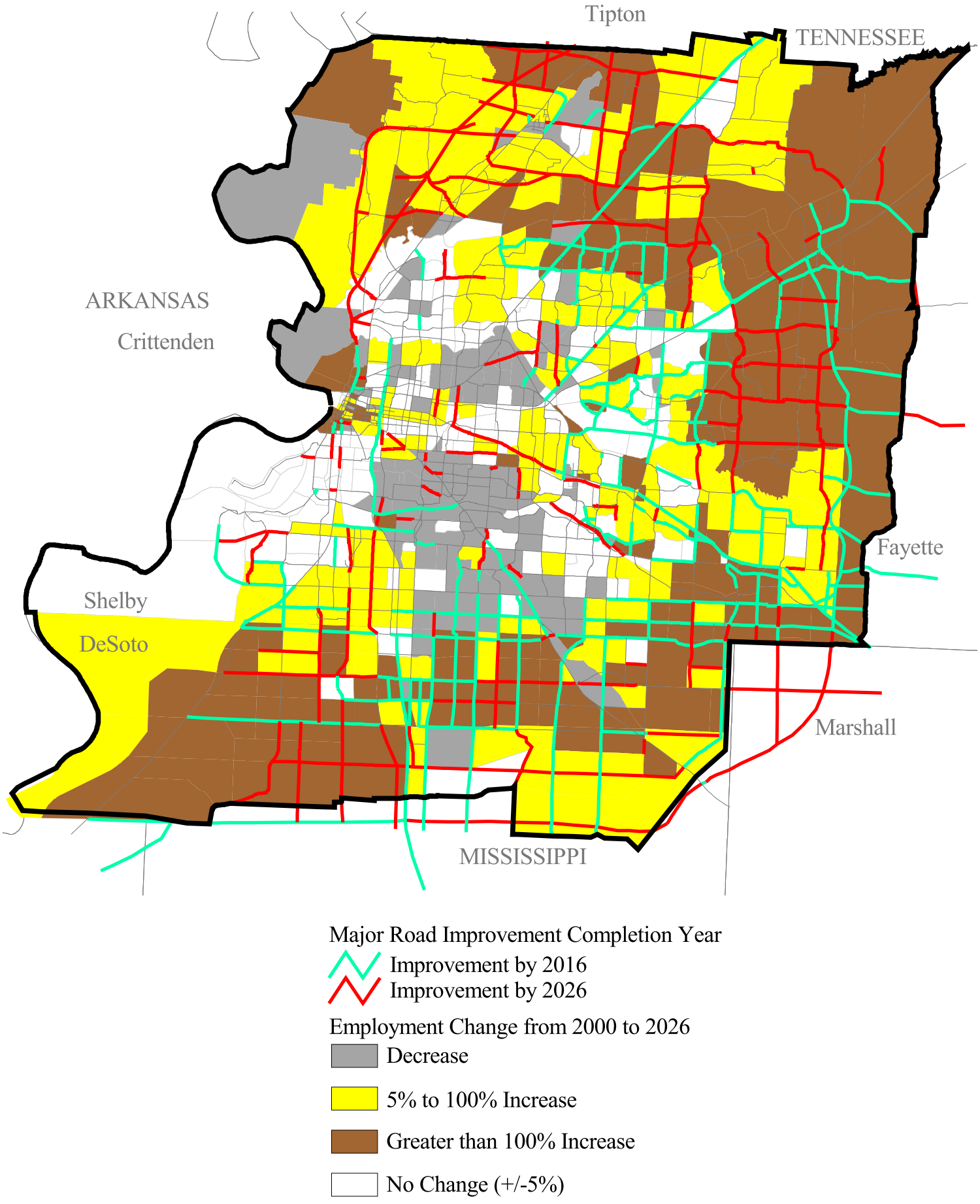
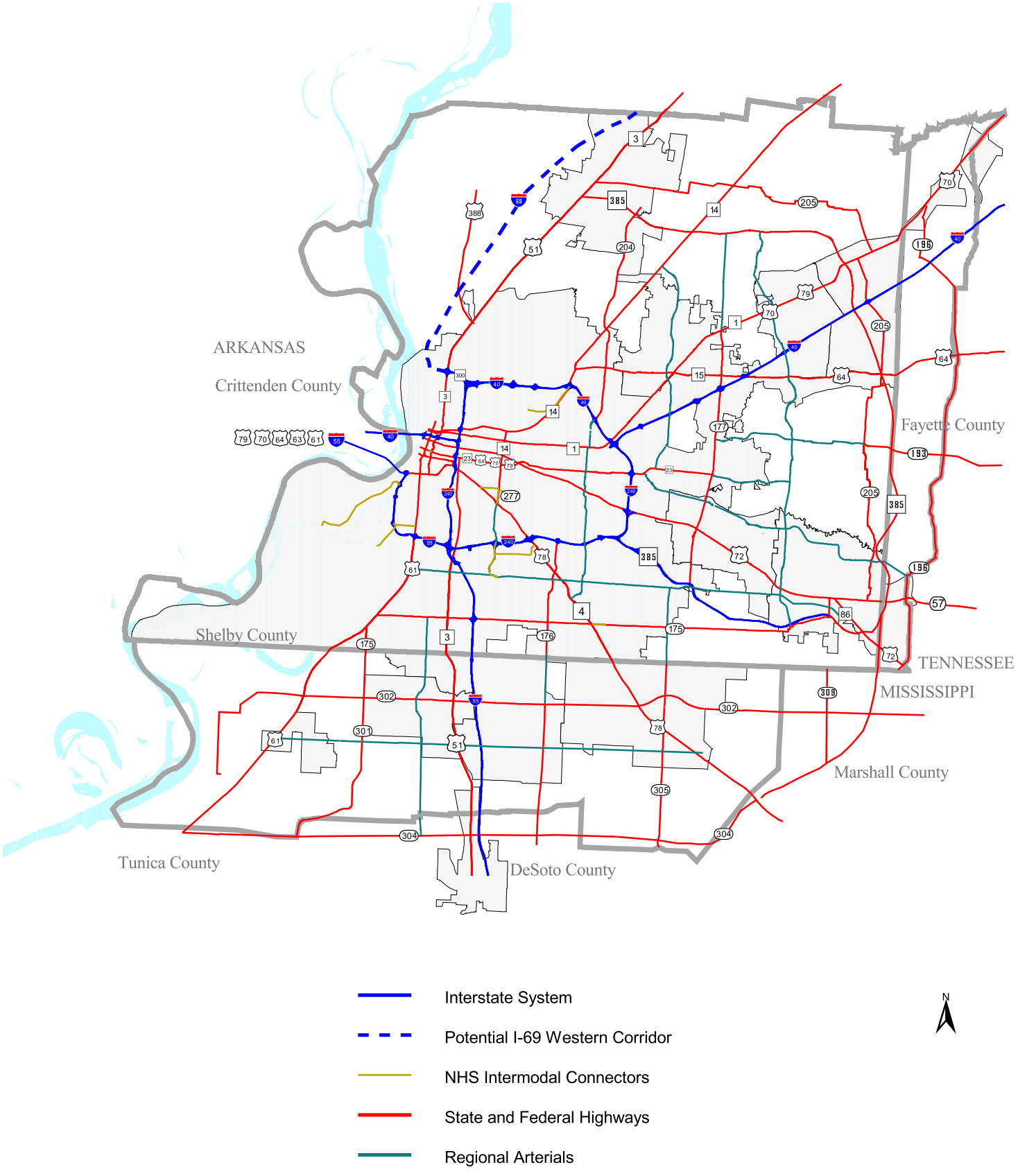


Figure 31
Regional Highways and Arterials in the Memphis MPO Region



Local arterials complete the grid system of the entire major road network. The connectivity they provide includes linking commercial, employment and residential areas to the regional network, serve alternatives to the regional roads for non-regional travel and provide a level of local access to appropriate higher density development. Overall, these roads serve a local transportation function and are therefore identified for funding from local sources. A major contributor to this funding source is private development as land along these corridors are developed or redeveloped with more intensive uses. The design and capacities of these roads are based on the planned land uses and projected growth in these corridors.

2. Recommended Road Projects

This LRTP is a 23-year planning document containing two broad horizon years of 10 years each. Prioritizing projects in the initial years of the plan is a concern for local jurisdictions and interest groups within the region. To that end, Tennessee and Mississippi jurisdictions have priority selection criteria for major road projects. The Tennessee and Mississippi criteria matrices **(See Appendix I)** have been approved by the MPO in its TIP adoption process. The selection criteria considers nine major factors - safety, congestion, air quality, land use impact, socio-economic conditions, network continuity, previous funding commitment, environmental factors and ability to implement the project.

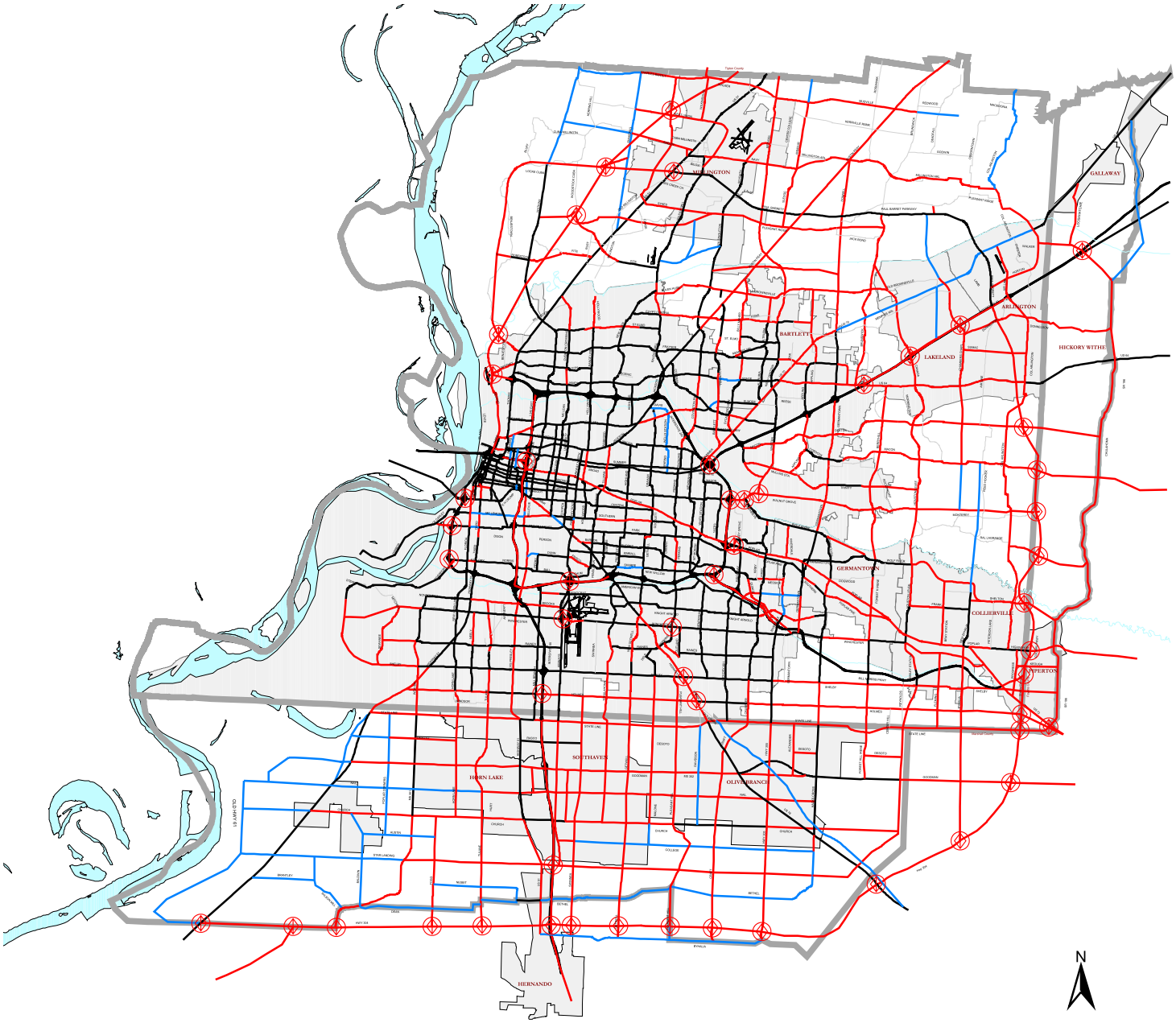
The recommended road network needed in 2026 to meet the goals and objectives of this plan and the travel demand projected by the Memphis MPO Travel Demand Model resolve issues of freight and congestion management. **Figure 32, Network Priority** shows roads and interchanges by priority that will be needed by the 2026 horizon year. The Priority One Road Projects are contained in the list of transportation projects found in **Appendix N**. This figure also shows roads and corridors that may be needed in the regional network beyond the year 2026 and identifies them as Priority Two Roads. The purpose of showing Priority Two roads is consistent with *23 CFR 450.316-10* and state enabling legislation in Mississippi and Tennessee. These priority two roads are future transportation corridors that need to be preserved and protected for future need.

This recommended road network also serves as a local thoroughfare plan again consistent with state enabling legislation in Mississippi and Tennessee related to road and land use planning. The priority system of this plan is used by the MPO local jurisdictions to guide their local zoning and subdivision regulations. At minimum the jurisdictions require that:

- Priority One Roads: The landowner or developer is required to dedicate and construct the road that abuts or traverses a property.
- Priority Two Roads: The landowner or developer is required to dedicate the full rights-of-way of the proposed road with adequate improvements to provide two travel lanes.

Many jurisdictions of the MPO require any major road in the MPO system be dedicated and improved regardless of priority status. This local policy for obtaining dedication and improvement of rights-of-way in the land development process is reflected in the

Figure 32
Network Priority



Roadways

- No Improvements
- Network Priority 1
- Network Priority 2
- Non-Major Roads

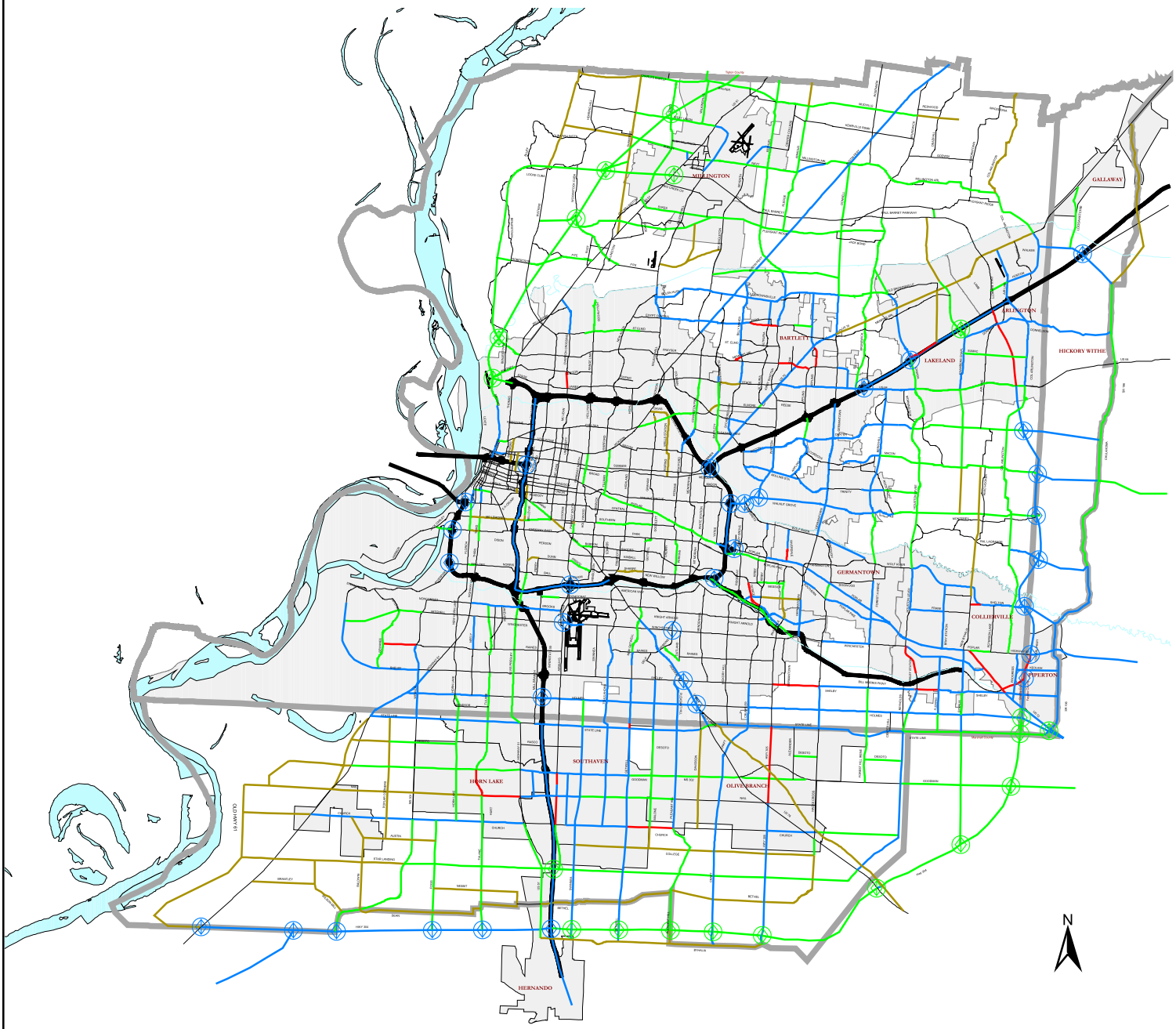
Interchanges

- Network Priority 1
- Network Priority 2

financial chapter of this plan. Identified as private funding, it reflects the amounts obtained by a county or local jurisdiction through this process to meet its obligation in providing these local road projects.

The LRTP provides guidance to the states and local jurisdictions in the planning and programming of road improvements. **Figure 33, Network by Horizon Year** identifies roads that are planned to be fully developed by horizon years 2006, 2016, and 2026. The roads planned for the horizon year 2016 may become operational anytime between 2007 and 2016. While this is a broad timeframe, it reflects the time when sufficient funding is available for the project.

Figure 33
Network Horizon Year



Roadways

- No Improvements
- Completion by 2006
- Completion by 2016
- Completion by 2026
- Beyond 2026

Interchanges

- Interchange Completion by 2016
- Interchange Completion by 2026

LRTP 2026 Projects/Strategies

All the road projects in the LRTP support the Light Rail Corridor Development Alternative and the goals of aviation, rail, port facilities, truck freight and intermodal facilities. In addition, all road projects advance the goals and strategies of the CMS.

SUPPORT OF LRTP 2026 GOALS

While supporting all of the goals of the LRTP 2026, the major road element specifically addresses the following goals and objectives:

- **Promote efficient land use and development patterns to ensure safety, economic vitality and to meet existing and future transportation needs**
  - **Promote the concentration of future employment and other activity centers along existing and planned major travel corridors**
  - **Promote infill development that reuses existing resources such as buildings, utilities and roads**

- **Encourage conservation of energy resources in addition to minimizing adverse impacts transportation has on social, economic and environmental attributes of the community**
  - **Protect and enhance environmentally sensitive areas**
  - **Minimize transportation noise impacts**

- **Develop a cost effective planning process that maximizes community consensus in all aspects of transportation planning**
  - **Support achievement of community consensus on transportation goals**

- **Increase the safety and security of the transportation system for motorized and non-motorized users**
  - **Develop right-of-way cross sections that permit the separation of sidewalks and utilities from driving lanes**
  - **Encourage policies, plans and transportation projects that eliminate unsafe designs and conditions or provide projects that increase safety for users**

- **Continue to develop a multi-modal transportation network that utilizes strategies for addressing congestion management and air quality issues in the MPO region**
  - **Promote street networks that ensure minimal congestion by reducing travel delays in accordance with the guidelines in the MPO's adopted CMS Plan**
  - **Continue to implement and promote strategies and policies such as access control, HOV facilities, travel demand management, mass transit & alternative transportation to improve congestion conditions**

- **Encourage improvements to and the expansion of freight facilities to ensure that Memphis maintains its leading role in global logistics**
    - **Work with the MSCAA and IPM to obtain funding for projects designated in their master plans**
    - **Work with Federal and State departments of transportation to obtain funding for the construction of I-69, I-22, I-269 and the new I-55 Highway/railway bridge**